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VOLUME 1

THE CHRONICLES
OF AMERICA SERIES

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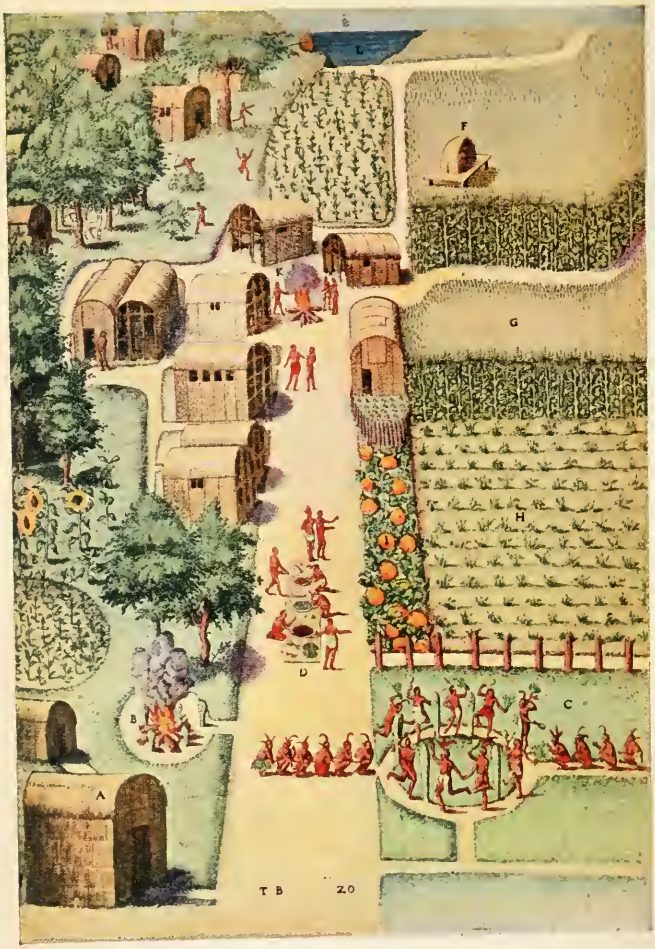


AN INDIAN VILLAGE IN EARLY VIRGINIA

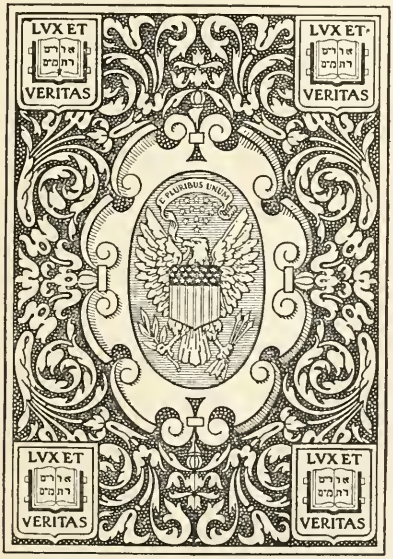
After a sketch by John White, who visited Virginia first in 1585

A. Here tombs of kings and princes were kept. B. The place for prayers. C. Plot where they celebrated sacred feasts. D. Merry-making after a feast. E. Tobacco culture. F. Guardian of the crops. G. Ripened corn. H. Corn-field. I. Pumpkins. K. Fire for sacred feasts. L. River.

THE NEW CONTINENT

PART 1: THE RED MAN'S CONTINENT
BY ELLSWORTH HUNTINGTON

PART 2: ELIZABETHAN SEA DOGS
BY WILLIAM WOOD



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PART I

THE RED MAN'S CONTINENT

A CHRONICLE
OF ABORIGINAL AMERICA
BY
ELLSWORTH HUNTINGTON

PREFACE

In writing this book the author has aimed first to present in readable form the main facts about the geographical environment of American history. Many important facts have been omitted or have been touched upon only lightly because they are generally familiar. On the other hand, special stress has been laid on certain broad phases of geography which are comparatively unfamiliar. One of these is the similarity of form between the Old World and the New, and between North and South America; another is the distribution of indigenous types of vegetation in North America; and a third is the relation of climate to health and energy. In addition to these subjects, the influence of geographical conditions upon the life of the primitive Indians has been emphasized. This factor is especially important because people without iron tools and beasts of burden, and without any cereal crops except corn, must respond to their environment very differently from civilized

people of today. Limits of space and the desire to make this book readable have led to the omission of the detailed proof of some of the conclusions here set forth. The special student will recognize such cases and will not judge them until he has read the author's fuller statements elsewhere. The general reader, for whom this book is designed, will be thankful for the omission of such purely technical details.

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THE RED MAN'S CONTINENT

CHAPTER I

THE APPROACHES TO AMERICA

Across the twilight lawn at Hampton Institute straggles a group of sturdy young men with copper-hued complexions. Their day has been devoted to farming, carpentry, blacksmithing, or some other trade. Their evening will be given to study. Those silent dignified Indians with straight black hair and broad, strong features are training their hands and minds in the hope that some day they may stand beside the white man as equals. Behind them, laughing gayly and chattering as if without a care in the world, comes a larger group of kinky-haired, thick-lipped youths with black skins and African features. They, too, have been working with the hands to train the mind. Those two diverse races, red and black, sit down together

in a classroom, and to them comes another race. The faces that were expressionless or merely mirthful a minute ago light up with serious interest as the teacher comes into the room. She stands there a slender, golden-haired, blue-eyed Anglo-Saxon girl just out of college — a mere child compared with the score of swarthy, stalwart men as old as herself who sit before her. Her mobile features seem to mirror a hundred thoughts while their impassive faces are moved by only one. Her quick speech almost trips in its eagerness not to waste the short, precious hour. Only a strong effort holds her back while she waits for the slow answers of the young men whom she drills over and over again in simple problems of arithmetic. The class and the teacher are an epitome of American history. They are more than that. They are an epitome of all history.

History in its broadest aspect is a record of man's migrations from one environment to another. America is the last great goal of these migrations. He who would understand its history must know its mountains and plains, its climate, its products, and its relation to the sea and to other parts of the world. He must know more than this, however, for he must appreciate how various environments

alter man's energy and capacity and give his character a slant in one direction or another. He must also know the paths by which the inhabitants have reached their present homes, for the influence of former environments upon them may be more important than their immediate surroundings. In fact, the history of North America has been perhaps more profoundly influenced by man's inheritance from his past homes than by the physical features of his present home. It is indeed of vast importance that trade can move freely through such natural channels as New York Harbor, the Mohawk Valley, and the Great Lakes. It is equally important that the eastern highlands of the United States are full of the world's finest coal, while the central plains raise some of the world's most lavish crops. Yet it is probably even more important that because of his inheritance from a remote ancestral environment man is energetic, inventive, and long-lived in certain parts of the American continent, while elsewhere he has not the strength and mental vigor to maintain even the degree of civilization to which he seems to have risen.

Three streams of migration have mainly determined the history of America. One was an ancient

and comparatively insignificant stream from Asia. It brought the Indian to the two great continents which the white man has now practically wrested from him. A second and later stream was the great tide which rolled in from Europe. It is as different from the other as West is from East. Thus far it has not wholly obliterated the native people, for between the southern border of the United States on the one hand, and the northern borders of Argentina, Chile, and Uruguay on the other, the vast proportion of the blood is still Indian. The European tide may in time dominate even this region, but for centuries to come the poor, disinherited Indians will continue to form the bulk of the population. The third stream flowed from Africa and was as different from either of the others as South is from North.

The differences between one and another of these three streams of population and the antagonisms which they have involved have greatly colored American history. The Indian, the European, and the Negro apparently differ not only in outward appearance but in the much more important matter of mentality. According to Brinton[1] the average brain capacity of Parisians, including

[1] D. G. Brinton, *The American Race.*

adults of both sexes, is 1448 cubic centimeters. That of the American Indian is 1376, and that of the Negro 1344 cubic centimeters. With this difference in size there appears to be a corresponding difference in function. Thus far not enough accurate tests have been made upon Indians to enable us to draw reliable conclusions. The Negro, however, has been tested on an extensive scale. The results seem to leave little doubt that there are real and measurable differences in the mental powers of races, just as we know to be the case among individuals. The matter is so important that we may well dwell on it a moment before turning to the cause of the differences in the three streams of American immigrants. If there is a measurable difference between the inherent brain power of the white race and the black, it is practically certain that there are also measurable differences between the white and the red.

Numerous tests indicate that in the lower mental powers there is no great difference between the black and the white. In physical reactions one is as quick as the other. In the capacity of the senses and in the power to perceive and to discriminate between different kinds of objects there is also practical equality. When it comes to the higher

faculties, however, such as judgment, inventiveness, and the power of organization, a difference begins to be apparent. These, as Ferguson[1] says, are the traits that "divide mankind into the able and the mediocre, the brilliant and the dull, and they determine the progress of civilization more directly than do the simple fundamental powers which man has in common with the lower animals." On the basis of the most exhaustive study yet made, Ferguson believes that, apart from all differences due to home training and environment, the average intellectual power of the colored people of this country is only about three-fourths as great as that of white persons of the same amount of training. He believes it probable, indeed, that this estimate is too high rather than too low. As to the Indian, his past achievements and present condition indicate that intellectually he stands between the white man and the Negro in about the position that would be expected from the capacity of his brain. If this is so, the mental differences in the three streams of migration to America are fully as great as the outward and manifest physical differences and far more important.

Why does the American Indian differ from the

[1] G. O. Ferguson, *The Psychology of the Negro*, New York, 1916.

Negro, and the European from both? This is a question on which we can only speculate. But we shall find it profitable to study the paths by which these diverse races found their way to America from man's primeval home. According to the now almost universally accepted theory, all the races of mankind had a common origin. But where did man make the change from a four-handed, tree-dwelling little ape to a much larger, upright creature with two hands and two feet? It is a mistake to suppose that because he is hairless he must have originated in a warm climate. In fact quite the opposite seems to be the case, for apparently he lost his hair because he took to wearing the skins of slain beasts in order that he might have not only his own hair but that of other animals as a protection from the cold.

In our search for the starting-place of man's slow migration to America our first step should be to ascertain what responses to physical environment are common to all men. If we find that all men live and thrive best under certain climatic conditions, it is fair to assume that those conditions prevailed in man's original home, and this conclusion will enable us to cast out of the reckoning the regions where they do not prevail. A study

of the relations of millions of deaths to weather conditions indicates that the white race is physically at its best when the average temperature for night and day ranges from about 50° to 73° F. and when the air is neither extremely moist nor extremely dry. In addition to these conditions there must be not only seasonal changes, but frequent changes from day to day. Such changes are possible only where there is a distinct winter and where storms are of frequent occurrence. The best climate is, therefore, one where the temperature ranges from not much below the freezing-point at night in winter to about 80° F. by day in summer, and where the storms which bring daily changes are frequent at all seasons.

Surprising as it may seem, this study indicates that similar conditions are best for all sorts of races. Finns from the Arctic Circle and Italians of sunny Sicily have the best health and greatest energy under practically the same conditions; so too with Frenchmen, Japanese, and Americans. Most surprising of all, the African black man in the United States is likewise at his best in essentially the same kind of weather that is most favorable for his white fellow-citizens, and for Finns, Italians, and other races. For the red race, no

exact figures are available, but general observation of the Indian's health and activity suggests that in this respect he is at one with the rest of mankind.

For the source of any characteristic so widespread and uniform as this adaptation to environment we must go back to the very beginning of the human race. Such a characteristic must have become firmly fixed in the human constitution before primitive man became divided into races, or at least before any of the races had left their original home and started on their long journey to America. On the way to this continent one race took on a dark reddish or brownish hue and its hair grew straight and black; another became black-skinned and crinkly-haired, while a third developed a white skin and wavy blonde hair. Yet throughout the thousands of years which brought about these changes, all the races apparently retained the indelible constitutional impress of the climate of their common birthplace. Man's physical adaptation to climate seems to be a deep-seated physiological fact like the uniformity of the temperature of the blood in all races. Just as a change in the temperature of the blood brings distress to the individual, so a change of climate apparently brings distress to a race. Again and again, to be sure, on

the way to America, and under many other circumstances, man has passed through the most adverse climates and has survived, but he has flourished and waxed strong only in certain zones.

Curiously enough man's body and his mind appear to differ in their climatic adaptations. Moreover, in this respect the black race, and perhaps the red, appears to be diverse from the white. In America an investigation of the marks of students at West Point and Annapolis indicates that the best mental work is done when the temperature averages not much above 40° F. for night and day together. Tests of school children in Denmark point to a similar conclusion. On the other hand, daily tests of twenty-two Negroes at Hampton Institute for sixteen months suggest that their mental ability may be greatest at a temperature only a little lower than that which is best for the most efficient physical activity. No tests of this sort have ever been made upon Indians, but such facts as the inventiveness of the Eskimo, the artistic development of the people of northern British Columbia and southern Alaska, and the relatively high civilization of the cold regions of the Peruvian plateau suggest that the Indian in this respect is more like the white race than the black. Perhaps

man's mental powers underwent their chief evolution after the various races had left the aboriginal home in which the physical characteristics became fixed. Thus the races, though alike in their physical response to climate, may possibly be different in their mental response because they have approached America by different paths.

Before we can understand how man may have been modified on his way from his original home to America, we must inquire as to the geographical situation of that home. Judging by the climate which mankind now finds most favorable, the human race must have originated in the temperate regions of Europe, Asia, or North America. We are not entirely without evidence to guide to a choice of one of the three continents. There is a scarcity of indications of preglacial man in the New World and an abundance of such indications in the Old. To be sure, several skulls found in America have been supposed to belong to a time before the last glacial epoch. In every case, however, there has been something to throw doubt on the conclusion. For instance, some human bones found at Vero in Florida in 1915 seem to be very old. Certain circumstances, however, suggest that possibly they may not really belong to the layers

of gravel in which they were discovered but may have been inserted at some later time. In the Old World, on the contrary, no one doubts that many human skulls and other parts of skeletons belong to the interglacial epoch preceding the last glacial epoch, while some appear to date from still more remote periods. Therefore no matter at what date man may have come to America, it seems clear that he existed in the Old World much earlier. This leaves us to choose between Europe and Asia. The evidence points to central Asia as man's original home, for the general movement of human migrations has been outward from that region and not inward. So, too, with the great families of mammals, as we know from fossil remains. From the earliest geological times the vast interior of Asia has been the great mother of the world, the source from which the most important families of living things have come.

Suppose, then, that we place in central Asia the primitive home of the thin-skinned, hairless human race with its adaptation to a highly variable climate with temperatures ranging from freezing to eighty degrees. Man could not stay there forever. He was bound to spread to new regions, partly because of his innate migratory tendency and partly

because of Nature's stern urgency. Geologists are rapidly becoming convinced that the mammals spread from their central Asian point of origin largely because of great variations in climate.[1] Such variations have taken place on an enormous scale during geological times. They seem, indeed, to be one of the most important factors in evolution. Since early man lived through the successive epochs of the glacial period, he must have been subject to the urgency of vast climatic changes. During the half million years more or less of his existence, cold, stormy, glacial epochs lasting tens of thousands of years have again and again been succeeded by warm, dry, interglacial epochs of equal duration.

During the glacial epochs the interior of Asia was well watered and full of game which supplied the primitive human hunters. With the advent of each interglacial epoch the rains diminished, grass and trees disappeared, and the desert spread over enormous tracts. Both men and animals must have been driven to sore straits for lack of food. Migration to better regions was the only recourse. Thus for hundreds of thousands of years there appears to have been a constantly recurring

[1] W. D. Matthew, *Climate and Evolution*, N. Y. Acad. Sci., 1915.

outward push from the center of the world's greatest land mass. That push, with the consequent overcrowding of other regions, seems to have been one of the chief forces impelling people to migrate and cover the earth.

Among the primitive men who were pushed outward from the Asian deserts during a period of aridity, one group migrated northeastward toward the Kamchatkan corner of Asia. Whether they reached Bering Sea and the Kamchatkan shore before the next epoch of glaciation we do not know. Doubtless they moved slowly, perhaps averaging only a few score or a hundred miles per generation, for that is generally the way with migrations of primitive people advancing into unoccupied territory. Yet sometimes they may have moved with comparative rapidity. I have seen a tribe of herdsmen in central Asia abandon its ancestral home and start on a zigzag march of a thousand miles because of a great drought. The grass was so scanty that there was not enough to support the animals. The tribe left a trail of blood, for wherever it moved it infringed upon the rights of others and so with conflict was driven onward. In some such way the primitive wanderers were kept in movement until at last they reached the bleak

shores of the North Pacific. Even there something — perhaps sheer curiosity — still urged them on. The green island across the bay may have been so enticing that at last a raft of logs was knotted together with stout withes. Perhaps at first the men paddled themselves across alone, but the hunting and fishing proved so good that at length they took the women and children with them, and so advanced another step along the route toward America. At other times distress, strife, or the search for game may have led the primitive nomads on and on along the coast until a day came when the Asian home was left and the New World was entered.

The route by which primitive man entered America is important because it determined the surroundings among which the first Americans lived for many generations. It has sometimes been thought that the red men came to America by way of the Kurile Islands, Kamchatka, and the Aleutian Islands. If this was their route, they avoided a migration of two or three thousand miles through one of the coldest and most inhospitable of regions. This, however, is far from probable. The distance from Kamchatka to the first of the Aleutian Islands is over one hundred miles. As the island is not in

sight from the mainland, there is little chance that a band of savages, including women, would deliberately sail thither. There is equally little probability that they walked to the island on the ice, for the sea is never frozen across the whole width. Nevertheless the climate may at that time have been colder than now. There is also a chance that a party of savages may have been blown across to the island in a storm. Suppose that they succeeded in reaching Bering Island, as the most Asiatic of the Aleutians is called, the next step to Copper Island would be easy. Then, however, there comes a stretch of more than two hundred miles. The chances that a family would ever cross this waste of ocean are much smaller than in the first case. Still another possibility remains. Was there once a bridge of land from Asia to America in this region? There is no evidence of such a link between the two continents, for a few raised beaches indicate that during recent geological times the Aleutian Islands have been uplifted rather than depressed.

The passage from Asia to America at Bering Strait, on the other hand, is comparatively easy. The Strait itself is fifty-six miles wide, but in the middle there are two small islands so that the longest stretch of water is only about thirty-five

miles. Moreover the Strait is usually full of ice, which frequently becomes a solid mass from shore to shore. Therefore it would be no strange thing if some primitive savages, in hunting for seals or polar bears, crossed the Strait, even though they had no boats. Today the people on both sides of the Strait belong to the American race. They still retain traditions of a time when their ancestors crossed this narrow strip of water. The Thilanottines have a legend that two giants once fought fiercely on the Arctic Ocean. One would have been defeated had not a man whom he had befriended cut the tendon of his adversary's leg. The wounded giant fell into Bering Strait and formed a bridge across which the reindeer entered America. Later came a strange woman bringing iron and copper. She repeated her visits until the natives insulted her, whereupon she went underground with her fire-made treasures and came back no more. Whatever may have been the circumstances that led the earliest families to cross from Asia to America, they little recked that they had found a new continent and that they were the first of the red race.

Unless the first Americans came to the new continent by way of the Kurile and Aleutian Islands,

it was probably their misfortune to spend many generations in the cold regions of northeastern Asia and northwestern America. Even if they reached Alaska by the Aleutian route but came to the islands by way of the northern end of the Kamchatkan Peninsula, they must have dwelt in a place where the January temperature averages − 10° F. and where there are frosts every month in the year. If they came across Bering Strait, they encountered a still more severe climate. The winters there are scarcely worse than in northern Kamchatka, but the summers are as cold as the month of March in New York or Chicago.

Perhaps a prolonged sojourn in such a climate is one reason for the stolid character of the Indians. Of course we cannot speak with certainty, but we must, in our search for an explanation, consider the conditions of life in the far north. Food is scanty at all times, and starvation is a frequent visitor, especially in winter when game is hard to get. The long periods of cold and darkness are terribly enervating. The nervous white man goes crazy if he stays too long in Alaska. Every spring the first boats returning to civilization carry an unduly large proportion of men who have lost their minds because they have endured too many dark, cold

winters. His companions say of such a man, "The North has got him." Almost every Alaskan recognizes the danger. As one man said to a friend, "It is time I got out of here."

"Why?" said the friend, "you seem all right. What's the matter?"

"Well," said the other, "you see I begin to like the smell of skunk cabbage, and, when a man gets that way, it's time he went somewhere else."

The skunk cabbage, by the way, grows in Alaska in great thickets ten feet high. The man was perfectly serious, for he meant that his mind was beginning to act in ways that were not normal. Nowhere is the strain of life in the far north better described than in the poems of Robert W. Service.

Oh, the awful hush that seemed to crush me down on every hand,
As I blundered blind with a trail to find through that blank and bitter land;
Half dazed, half crazed in the winter wild, with its grim heart-breaking woes,
And the ruthless strife for a grip on life that only the sourdough knows!
North by the compass, North I pressed; river and peak and plain
Passed like a dream I slept to lose and waked to dream again.

River and plain and mighty peak — and who could stand unawed?
As their summits blazed, he could stand undazed at the foot of the throne of God.
North, aye, North, through a land accurst, shunned by the scouring brutes,
And all I heard was my own harsh word and the whine of the malamutes,
Till at last I came to a cabin squat, built in the side of a hill,
And I burst in the door, and there on the floor, frozen to death, lay Bill.[1]

The human organism inherits so delicate an adjustment to climate that, in spite of man's boasted ability to live anywhere, the strain of the frozen North eliminates the more nervous and active types of mind. Only those can endure whose nerves lack sensitiveness and who are able to bear long privation and the strain of hunger and cold and darkness. Though the Indian may differ from the white man in many respects, such conditions are probably as bad for him as for any race. For this reason it is not improbable that long sojourns at way stations on the cold, Alaskan route from central Asia may have weeded out certain types of minds. Perhaps that is why the Indian, though

[1] From *Ballads of a Cheechako.*

brave, stoical, and hardy, does not possess the alert, nervous temperament which leads to invention and progress.

The ancestors of the red man unwittingly chose the easiest path to America and so entered the continent first, but this was their misfortune. They could not inherit the land because they chose a path whose unfavorable influence, exerted throughout centuries, left them unable to cope with later arrivals from other directions. The parts of America most favorable for the Indian are also best for the white man and Negro. There the alerter minds of the Europeans who migrated in the other direction have quickly eliminated the Indian. His long northern sojourn may be the reason why farther south in tropical lands he is even now at a disadvantage compared with the Negro or with the coolie from the East Indies. In Central America, for instance, it is generally recognized that Negroes stand the heat and moisture of the lowlands better than Indians. According to a competent authority: "The American Indians cannot bear the heat of the tropics even as well as the European, not to speak of the African race. They perspire little, their skin becomes hot, and they are easily prostrated by exertion in an elevated temperature.

They are peculiarly subject to diseases of hot climates, as hepatic disorders, showing none of the immunity of the African. Furthermore, the finest physical specimens of the race are found in the colder regions of the temperate zones, the Pampas and Patagonian Indians in the south, the Iroquois and Algonkins in the north; whereas, in the tropics they are generally undersized, short-lived, of inferior muscular force and with slight tolerance of disease."[1] "No one," adds another observer, "could live among the Indians of the Upper Amazon without being struck with their constitutional dislike to heat. The impression forced itself upon my mind that the Indian lives as a stranger or immigrant in these hot regions."[2] Thus when compared with the other inhabitants of America, from every point of view the Indian seems to be at a disadvantage, much of which may be due to the path which he took from the Old World to the New.

Before the red man lost his American heritage, he must have enjoyed it for thousands upon thousands of years. Otherwise he never could have become so different from his nearest relative, the Mongol. The two are as truly distinct races

[1] D. G. Brinton, *The American Race*, pp. 34, 35.

[2] H. W. Bates, *The Naturalist on the River Amazons*, vol. II, pp. 200, 201.

as are the white man and the Malay. Nor could the Indians themselves have become so extraordinarily diverse except during the lapse of thousands of years. The Quichua of the cold highlands of Peru is as different from the Maya of Yucatan or the Huron of southern Canada as the Swede is from the Armenian or the Jew. The separation of one stock from another has gone so far that almost countless languages have been developed. In the United States alone the Indians have fifty-five "families" of languages and in the whole of America there are nearly two hundred such groups. These comprise over one thousand distinct languages which are mutually unintelligible and at least as different as Spanish and Italian. Such differences might arise in a day at the Tower of Babel, but in the processes of evolution they take thousands of years.

During those thousands of years the red man, in spite of his Arctic handicap, by no means showed himself wholly lacking in originality and inventive ability. In Yucatan two or three thousand years ago the Mayas were such good scientists and recorded their observations of the stars so accurately that they framed a calendar more exact than any except the one that we have used for the last two

centuries. They showed still greater powers of mind in inventing the art of writing and in their architecture. Later we shall depict the environment under which these things occurred; it is enough to suggest in passing that perhaps at this period the ancestors of the Indians had capacities as great as those of any people. Today they might possibly hold their own against the white man, were it not for the great handicap which they once suffered because Asia approaches America only in the cold, depressing north.

The Indians were not the only primitive people who were driven from central Asia by aridity. Another group pushed westward toward Europe. They fared far better than their Indian cousins who went to the northeast. These prospective Europeans never encountered benumbing physical conditions like those of northeastern Asia and northwestern America. Even when ice shrouded the northern part of Europe, the rest of the continent was apparently favored with a stimulating climate. Then as now, Europe was probably one of the regions where storms are most frequent. Hence it was free from the monotony which is so deadly in other regions. When the ice retreated our European ancestors doubtless followed slowly in its

wake. Thus their racial character was evolved in one of the world's most stimulating regions. Privation they must have suffered, and hardihood and boldness were absolutely essential in the combat with storms, cold, wild beasts, fierce winds, and raging waves. But under the spur of constant variety and change, these difficulties were merely incentives to progress. When the time came for the people of the west of Europe to cross to America, they were of a different caliber from the previous immigrants.

Two facts of physical geography brought Europe into contact with America. One of these was the islands of the North, the other the trade-winds of the South. Each seems to have caused a preliminary contact which failed to produce important results. As in the northern Pacific, so in the northern Atlantic, islands are stepping-stones from the Old World to the New. Yet because in the latter case the islands are far apart, it is harder to cross the water from Norway and the Lofoten Islands to Iceland and Greenland than it is to cross from Asia by way of the Aleutian Islands or Bering Strait. Nevertheless in the tenth century of the Christian era bold Norse vikings made the passage in the face of storm and wind. In their slender

open ships they braved the elements on voyage after voyage. We think of the vikings as pirates, and so they were. But they were also diligent colonists who tilled the ground wherever it would yield even the scantiest living. In Iceland and Greenland they must have labored mightily to carry on the farms of which the Sagas tell us. When they made their voyages, honest commerce was generally in their minds quite as much as was plunder. Leif, the son of that rough Red Eric who first settled Greenland, made a famous voyage to Vinland, the mainland of America. Like so many other voyagers he was bent on finding a region where men could live happily and on filling his boats with grapes, wood, or other commodities worth carrying home.

In view of the energy of the Norsemen, the traces of their presence in the Western Hemisphere are amazingly slight. In Greenland a few insignificant heaps of stones are supposed to show where some of them built small villages. Far in the north Stefansson found fair-haired, blue-eyed Eskimos. These may be descendants of the Norsemen, although they have migrated thousands of miles from Greenland. In Maine the Micmac Indians are said to have had a curious custom which they

may have learned from the vikings. When a chief died, they chose his largest canoe. On it they piled dry wood, and on the wood they placed the body. Then they set fire to the pile and sent the blazing boat out to sea. Perhaps in earlier times the Micmacs once watched the flaming funeral pyre of a fair-haired viking. As the ruddy flames leaped skyward and were reflected in the shimmering waves of the great waters the tribesmen must have felt that the Great Spirit would gladly welcome a chief who came in such a blaze of glory.[1]

It seems strange that almost no other traces of the strong vikings are found in America. The explanation lies partly in the length and difficulty of the ocean voyage, and partly in the inhospitable character of the two great islands that served as stepping-stones from the Old World to the New. Iceland with its glaciers, storms, and long dreary winters is bad enough. Greenland is worse. Merely the tip of that island was known to the Norse — and small wonder, for then as now most of Greenland was shrouded in ice. Various Scandinavian authors, however, have thought that during the most prosperous days of the vikings the conditions in Greenland were not quite so bad as

[1] For this information I am indebted to Mr. Stansbury Hagar.

at the present day. One settlement, Osterbyden, numbered 190 farms, 12 churches, 2 monasteries, and 1 bishopric. It is even stated that apple-trees bore fruit and that some wheat was raised. "Cattle-raising and fishing," says Pettersson, "appear to have procured a good living. . . . At present the whole stock of cattle in Greenland does not amount to 100 animals."[1] In those days the ice which borders all the east coast and much of the west seems to have been less troublesome than now. In the earliest accounts nothing is said of this ice as a danger to navigation. We are told that the best sailing route was through the strait north of Cape Farewell Island, where today no ships can pass because of the ice. Since the days of the Norsemen the glaciers have increased in size, for the natives say that certain ruins are now buried beneath the ice, while elsewhere ruins can be seen which have been cut off from the rest of the country by advancing glacial tongues.

Why the Norsemen disappeared from the Western Hemisphere we do not exactly know, but there are interesting hints of an explanation. It appears

[1] O. Pettersson, *Climatic Variations in Historic and Prehistoric Times*. Svenska Hydrografisk — Biologiska Kommissioneur Skrifter, Haft v. Stockholm.

that the fourteenth century was a time of great distress. In Norway the crops failed year after year because of cold and storms. Provinces which were formerly able to support themselves by agriculture were obliged to import food. The people at home were no longer able to keep in touch with the struggling colony in Greenland. No supplies came from the home land, no reënforcements to strengthen the colonists and make them feel that they were a part of the great world. Moreover in the late Norse sagas much is said about the ice along the Greenland coast, which seems to have been more abundant than formerly. Even the Eskimos seem to have been causing trouble, though formerly they had been a friendly, peaceable people who lived far to the north and did not disturb the settlers. In the fourteenth century, however, they began to make raids such as are common when primitive people fall into distress. Perhaps the storms and the advancing ice drove away the seals and other animals, so that the Eskimos were left hungry. They consequently migrated south and, in the fifteenth century, finally wiped out the last of the old Norse settlers. If the Norse had established permanent settlements on the mainland of North America, they might have

persisted to this day. As it was, the cold, bleak climate of the northern route across the Atlantic checked their progress. Like the Indians, they had the misfortune of finding a route to America through regions that are not good for man.

Though islands may be stepping-stones between the Old World and the New, they have not been the bringers of civilization. That function in the history of man has been left to the winds. The westerlies, however, which are the prevailing winds in the latitude of the United States and Europe, have not been of much importance. On the Atlantic side they were for many centuries a barrier to contact between the Old World and the New. On the Pacific side they have been known to blow Japanese vessels to the shores of America contrary to the will of the mariners. Perhaps the same thing may have happened in earlier times. Asia may thus have made some slight contribution to primitive America, but no important elements of civilization can be traced to this source.

From latitude 30° N. to 30° S. the trade-winds prevail. As they blow from the east, they make it easy for boats to come from Africa to America. In comparatively recent times they brought the slave ships from the Guinea coast to our Southern States.

The African, like the Indian, has passed through a most unfavorable environment on his way from central Asia to America. For ages he was doomed to live in a climate where high temperature and humidity weed out the active type of human being. Since activity like that of Europe means death in a tropical climate, the route by way of Africa has been if anything worse than by Bering Strait.

By far the most important occurrence which can be laid at the door of the trade-winds is the bringing of the civilization of Europe and the Mediterranean to the New World. Twice this may have happened, but the first occurrence is doubtful and left only a slight impress. For thousands of years the people around the Mediterranean Sea have been bold sailors. Before 600 B.C. Pharaoh Necho, so Herodotus says, had sent Phenician ships on a three-year cruise entirely around Africa. The Phenicians also sailed by way of Gibraltar to England to bring tin from Cornwall, and by 500 B.C. the Carthaginians were well acquainted with the Atlantic coast of northern Africa.

At some time or other, long before the Christian era, a ship belonging to one of the peoples of the eastern Mediterranean was probably blown to the shores of America by the steady trade-winds. Of

course, no one can say positively that such a voyage occurred. Yet certain curious similarities between the Old World and the New enable us to infer with a great deal of probability that it actually happened. The mere fact, for example, that the adobe houses of the Pueblo Indians of New Mexico are strikingly like the houses of northern Africa and Persia is no proof that the civilization of the Old World and the New are related. A similar physical environment might readily cause the same type of house to be evolved in both places. When we find striking similarities of other kinds, however, the case becomes quite different. The constellations of the zodiac, for instance, are typified by twelve living creatures, such as the twins, the bull, the lion, the virgin, the crab, and the goat. Only one of the constellations, the scorpion, presents any real resemblance to the animal for which it is named. Yet the signs of the zodiac in Mediterranean lands and in pre-Columbian America from Peru to southern Mexico are almost identical. Here is a list showing the Latin and English names of the constellations and their equivalents in the calendars of the Peruvians, Mexicans, and Mayas.[1]

[1] See S. Hagar, *The Bearing of Astronomy on the Problems of the Unity or Plurality and the Probable Place of Origin of the American Aborigines*, in *American Anthropologist*, vol. XIV (1912), pp. 43–48.

Sign	*English*	*Peruvian*	*Mexican*	*Maya*
Aries	Ram	Llama	Flayer	
Taurus	Bull (originally Stag)	Stag	Stag or Deer	Stag
Gemini	Twins	Man and Woman	Twins	Two Generals
Cancer	Crab	Cuttlefish	Cuttlefish	Cuttlefish
Leo	Lion	Puma	Ocelot	Ocelot
Virgo	Virgin (Mother Goddess of Cereals)	Maize Mother	Maize Mother	Maize Mother
Libra	Scales (originally part of Scorpio)	Forks	Scorpion	Scorpion
Scorpio	Scorpion	Mummy	Scorpion	Scorpion
Sagittarius	Bowman	Arrows or Spears	Hunter and War God	Hunter and War God
Capricornus	Sea Goat	Beard	Bearded God	
Aquarius	Water Pourer	Water	Water	Water
Pisces	Fishes (and Knot)	Knot	Twisted Reeds	

Notice how closely these lists are alike. The ram does not appear in America because no such animal was known there. The nearest substitute was the llama. In the Old World the second constellation is now called the bull, but curiously enough in earlier days it was called the stag in Mesopotamia. The twins, instead of being Castor and Pollux, may equally well be a man and a woman or two generals. To landsmen not familiar with creatures of the deep, the crab and the cuttlefish would not seem greatly different. The lion is unknown in America, but the creature which most nearly takes

his place is the puma or ocelot. So it goes with all the signs of the zodiac. There are little differences between the Old World and the New, but they only emphasize the resemblance. Mathematically there is not one chance in thousands or even millions that such a resemblance could grow up by accident. Other similarities between ceremonies or religious words in the Old World and the New might be pointed out, but the zodiac is illustration enough.

Such resemblances, however, do not indicate a permanent connection between Mediterranean civilization and that of Central America. They do not even indicate that any one ever returned from the Western Hemisphere to the Eastern previous to Columbus. Nor do they indicate that the civilization of the New World arose from that of the Old. They simply suggest that after the people of the Mediterranean regions had become well civilized and after those of America were also sufficiently civilized to assimilate new ideas, a stray ship or two was blown by the trade-winds across the Atlantic. That hypothetical voyage was the precursor of the great journey of Columbus. Without the trade-winds this historic discoverer never could have found the West Indies. Suppose that a strong west wind had blown him backward on his course

when his men were mutinous. Suppose that he had been forced to beat against head winds week after week. Is there one chance in a thousand that even his indomitable spirit could have kept his craft headed steadily into the west? But because there were the trade-winds to bring him, the way was opened for the energetic people of Europe to possess the new continent. Thus the greatest stream of immigration commenced to flow, and the New World began to take on a European aspect.

CHAPTER II

THE FORM OF THE CONTINENT

America forms the longest and straightest bone in the earth's skeleton. The skeleton consists of six great bones, which may be said to form a spheroidal tetrahedron, or pyramid with a triangular base, for when a globe with a fairly rigid surface collapses because of shrinkage, it tends to assume this form. That is what has happened to the earth. Geologists tell us that during the thousand million years, more or less, since geological history began, the earth has grown cooler and hence has contracted. Moreover some of the chemical compounds of the interior have been transformed into other compounds which occupy less space. For these reasons the earth appears to have diminished in size until now its diameter is from two hundred to four hundred miles less than formerly. During the process of contraction the crust has collapsed in four main areas, roughly triangular in

shape. Between these stand the six ridges which we have called the bones. Each of the four depressed areas forms a side of our tetrahedron and is occupied by an ocean. The ridges and the areas immediately flanking the oceans form the continents. The side which we may think of as the base contains the Arctic Ocean. The ridges surrounding it are broad and flat. Large parts of them stand above sea-level and form the northern portions of North America, Europe, and Asia. A second side is the Pacific Ocean with the great ridge of the two Americas on one hand and Asia and Australia on the other. Next comes the side containing the Indian Ocean in the hollow and the ridges of Africa and Australia on either hand. The last of the four sides contains the Atlantic Ocean and is bounded by Africa and Europe on one hand and North and South America on the other. Finally the tip of the pyramid projects above the surrounding waters, and forms the continent of Antarctica.

It may seem a mere accident that this tip lies near the South Pole, while the center of the opposite face lies near the North Pole. Yet this has been of almost infinite importance in the evolution not only of plants and animals but of men. The

reason is that this arrangement gives rise to a vast and almost continuous land mass in comparatively high latitudes. Only in such places does evolution appear to make rapid progress.[1]

Evolution is especially stimulated by two conditions. The first is that there shall be marked changes in the environment so that the process of natural selection has full opportunity to do its work. The second is that numerous new forms or mutants, as the biologists call them, shall be produced. Both of these conditions are most fully met in large continents in the temperate zone, for in such places climatic variations are most extreme. Such variations may take the form of extreme changes either from day to night, from season to season, or from one century to another. In any case, as Darwin long ago pointed out, they cause some forms of life to perish while others survive. Thus climatic variations are among the most powerful factors in causing natural selection and hence in stimulating evolution. Moreover it has lately been shown that variations in temperature are one of the chief causes of organic variation. Morgan and Plough,[2] for example, have discovered that

[1] W. D. Matthew, *Climate and Evolution*, N. Y. Acad. Sci., 1915.

[2] Unpublished manuscript.

when a certain fly, called the drosophila, is subjected to extremes of heat or cold, the offspring show an unusually strong tendency to differ from the parents. Hence the climatic variability of the interior of large continents in temperate latitudes provides new forms of life and then selects some of them for preservation. The fossils found in the rocks of the earth's crust support this view. They indicate that most of the great families of higher animals originated in the central part of the great land mass of Europe and Asia. A second but much smaller area of evolution was situated in the similar part of North America. From these two centers new forms of life spread outward to other continents. Their movements were helped by the fact that the tetrahedral form of the earth causes almost all the continents to be united by bridges of land.

If any one doubts the importance of the tetrahedral form, let him consider how evolution would have been hampered if the land of the globe were arranged as isolated masses in low latitudes, while oceans took the place of the present northern continents. The backwardness of the indigenous life of Africa shows how an equatorial position retards evolution. The still more marked backwardness of Australia with its kangaroos and duck-billed

platypuses shows how much greater is the retardation when a continent is also small and isolated. Today, no less than in the past, the tetrahedral form of the earth and the relation of the tetrahedron to the poles and to the equator preserve the conditions that favor rapid evolution. They are the dominant factors in determining that America shall be one of the two great centers of civilization.

If North and South America be counted as one major land mass, and Europe, Asia, and Africa as another, the two present the same general features. Yet their mountains, plains, and coastal indentations are so arranged that what is on the east in one is on the west in the other. Their similarity is somewhat like that of a man's two hands placed palms down on a table.

On a map of the world place a finger of one hand on the western end of Alaska and a finger of the other on the northeastern tip of Asia and follow the main bones of the two continents. See how the chief mountain systems, the Pacific "cordilleras," trend away from one another, southeastward and southwestward. In the centers of the continents they expand into vast plateaus. That of America in the Rocky Mountain region of the United States reaches a width of over a thousand miles, while

that of Asia in Tibet and western China expands to far greater proportions.

From the plateaus the two cordilleras swing abruptly Atlanticward. The Eurasian cordillera extends through the Hindu Kush, Caucasus, and Asia Minor ranges to southern Europe and the Alps. Then it passes on into Spain and ends in the volcanoes of the Canary Islands. The American cordillera swings eastward in Mexico and continues as the isolated ranges of the West Indies until it ends in the volcanoes of Martinique. Central America appears at first sight to be a continuation of the great cordillera, but really it is something quite different — a mass of volcanic material poured out in the gap where the main chain of mountains breaks down for a space. In neither hemisphere, however, is the main southward sweep of the mountains really lost. In the Old World the cordillera revives in the mountains of Syria and southern Arabia and then runs southward along the whole length of eastern Africa. In America it likewise revives in the mighty Andes, which take their rise fifteen hundred miles east of the broken end of the northern cordillera in Mexico. In the Andes even more distinctly than in Africa the cordillera forms a mighty wall running north and

south. It expands into the plateau of Peru and Bolivia, just as its African compeer expands into that of Abyssinia, but this is a mere incident. The main bone, so to speak, keeps on in each case till it disappears in the great southern ocean. Even there, however, it is not wholly lost, for it revives in the cold, lofty continent of Antarctica, where it coalesces once more with the other great tetrahedral ridges of Africa and Australia.

It is easy to see that these great cordilleras have turned most of the earth's chief rivers toward the Atlantic and the Arctic Oceans. That is why these two oceans with an area of only forty-three million square miles receive the drainage from twenty million square miles of land, while the far larger Indian and Pacific Oceans with an area of ninety-one million square miles receive the rivers of only ten million square miles. The world's streams of civilization, like the rivers of water, have flowed from the great cordilleras toward the Atlantic. Half of the world's people, to be sure, are lodged in the relatively small areas known as China and India on the Pacific side of the Old World cordillera. Nevertheless the active streams of civilization have flowed mainly on the other side — the side where man apparently originated. From the

earliest times the mountains have served to determine man's chief migrations. Their rugged fastnesses hinder human movements and thereby give rise to a strong tendency to move parallel to their bases. During the days of primitive man the trend of the mountains apparently directed his migrations northeastward to Bering Strait and then southeastward and southward from one end of America to the other. In the same way the migrations to Europe and Africa which ultimately reached America moved mainly parallel to the mountains.

From end to end of America the great mountains form a sharp dividing line. The aboriginal tribes on the Pacific slope are markedly different from those farther east across the mountains. Brinton sums the case up admirably:

> As a rule the tribes of the western coast are not connected with any east of the mountains. What is more singular, although they differ surprisingly among themselves in language, they have marked anthropologic similarities, physical and psychical. Virchow has emphasized the fact that the skulls from the northern point of Vancouver's Island reveal an unmistakable analogy to those from the southern coast of California; and this is to a degree true of many intermediate points. Not that the crania have the same indices. On

the contrary, they present great and constant differences within the same tribe; but these differences are analogous one to the other, and on fixed lines.

There are many other physical similarities which mark the Pacific Indians and contrast them with those east of the mountains. The eyes are less oblique, the nose flatter, the lips fuller, the chin more pointed, the face wider. There is more hair on the face and in the axilla, and the difference between the sexes is much more obvious.

The mental character is also in contrast. The Pacific tribes are more quiet, submissive, and docile; they have less courage, and less of that untamable independence which is so constant a feature in the history of the Algonquins and Iroquois.[1]

Although mountains may guide migrations, the plains are the regions where people dwell in greatest numbers. The plains in the two great land masses of the Old World and the New have the same inverse or right- and left-handed symmetry as the mountains. In the north the vast stretches from the Mackenzie River to the Gulf of Mexico correspond to the plains of Siberia and Russia from the Lena to the Black Sea. Both regions have a vast sweep of monotonous tundras at the north and both become fertile granaries in the center. Before the white man introduced the horse, the ox, and

[1] D. G. Brinton, *The American Race*, pp. 103–4.

iron ploughs, there prevailed an extraordinary similarity in the habits of the plains Indians from Texas to Alberta. All alike depended on the buffalo; all hunted him in much the same way; all used his skins for tents and robes, his bones for tools, and his horns for utensils. All alike made him the center of their elaborate rituals and dances. Because the plains of North America were easy to traverse, the relatively high culture of the ancient people of the South spread into the Mississippi Valley. Hence the Natchez tribe of Mississippi had a highly developed form of sun-worship and a well-defined caste system with three grades of nobility in addition to the common people. Even farther north, almost to the Ohio River, traces of the sun-worship of Mexico had penetrated along the easy pathway of the plains.

South of the great granaries of North America and Eurasia the plains are broken, but occur again in the Orinoco region of South America and the Sahara of Africa. Thence they stretch almost unbroken toward the southern end of the continents. In view of the fertility of the plains it is strange that the centers of civilization have so rarely been formed in these vast level expanses.

The most striking of the inverse resemblances

between America and the Old World are found along the Atlantic border. In the north of Europe the White Sea corresponds to Hudson Bay in America. Farther toward the Atlantic Ocean Scandinavia with its mountains, glaciers, and fiords is similar to Labrador, although more favored because warmer. Next the islands of Great Britain occupy a position similar to that of Newfoundland and Prince Edward Island. But here again the eastern climate is much more favorable than the western. Although practically all of Newfoundland is south of England, the American island has only six inhabitants per square mile, while the European country has six hundred. To the east of the British Isles the North Sea, the Baltic, and Lakes Ladoga and Onega correspond in striking fashion to the Gulf of St. Lawrence, the river of the same name, and the Great Lakes from Ontario to Superior. Next the indented shores of western France and the peninsula of Spain resemble our own indented coast and the peninsula of Florida. Here at last the American regions are as favored as the European. Farther south the Mediterranean and Black seas penetrate far into the interior just as does the Gulf of Mexico, and each continent is nearly cut in two where the

canals of Suez and Panama respectively have been trenched. Finally in the southern continents a long swing eastward in America balances a similar swing westward in Africa. Thus Cape Saint Roque and Cape Verde are separated by scarcely 16° of longitude, although the extreme points of the Gulf of Mexico and the Black Sea are 140° apart. Finally to the south of the equator the continents swing away from one another once more, preserving everywhere the same curious inverse relationship.

Even more striking than the inverse resemblance of the New World to the Old is the direct similarity of North and South America. In physical form the two continents are astonishingly alike. Not only does each have the typical triangular form which would naturally arise from tetrahedral shrinking of the globe, but there are four other cardinal points of resemblance. First, in the northeast each possesses an area of extremely ancient rocks, the Laurentian highlands of Quebec and Labrador in North America and the highlands of Guiana in South America. Second, in the southeast lie highlands of old but not the most ancient rocks stretching from northeast to southwest in the Appalachian region of North America and in

the Brazilian mountains of the southern continent. Third, along the western side of each continent recent crustal movements supplemented by volcanic action on a magnificent scale have given rise to a complex series of younger mountains, the two great cordilleras. Finally, the spaces between the three mountain masses are occupied by a series of vast confluent plains which in each case extend from the northern ocean to the southern and bend around the southeastern highlands. These plains are the newest part of America, for many of them have emerged from the sea only in recent geological times. Taken as a whole the resemblance between the two continents is striking.

If these four physiographic provinces of North and South America lay in similar latitudes in the respective continents we might expect each pair to have a closely similar effect on life. In fauna, flora, and even in human history they would present broad and important resemblances. As a matter of fact, however, they are as different as can well be imagined. Where North America is bathed by icy waters full of seals and floating ice South America is bathed by warm seas full of flying-fish and coral reefs. The northern continent is broadest in the cool latitudes that are most

favorable for human activity. The southern expands most widely in latitudes whose debilitating monotony of heat and moisture is the worst of handicaps to human progress. The great rivers of the northern continent correspond very closely to those of the southern. The Mackenzie, however, is bound in the rigid bands of winter for eight months each year, while the Orinoco, the corresponding South American river, lies sweltering under a tropical sun which burns its grassy plains to bitter dust even as the sharp cold reduced the Mackenzie region to barren tundra. The St. Lawrence flows through fertile grain fields and the homes of an active people of the temperate zone, but the Amazon winds its slow way amid the malarious languor of vast tropical forests in which the trees shut out the sky and the few natives are apathetic with the eternal inertia of the hot, damp tropics.

Only when we come to the Mississippi in the northern continent and the Rio de la Plata in the southern do we find a pair of rivers which correspond to any degree in the character of the life surrounding them, as well as in their physiographic character. Yet even here there is a vast difference, especially in the upper courses of the river. Each at its mouth flows through a rich, fertile plain occupied

by a progressive, prosperous people. But the Rio de la Plata takes its rise in one of the world's most backward plains, the home of uncivilized Indians, heartless rubber adventurers, and the most rapacious of officials. Not infrequently, the degenerate white men of these regions, yielding to the subtle and insidious influence of the tropics, inflict the most outrageous abuses upon the natives, and even kill them on slight provocation. The natives in turn hate their oppressors, and when the chance comes betray them or leave them to perish in sickness and misery. The upper Mississippi, on the other hand, comes from a plain where agriculture is carried on with more labor-saving devices than are found anywhere else in the world. There States like Wisconsin and Minnesota stand in the forefront of educational and social progress. The contrasts between the corresponding rivers of the two Americas are typical of the contrasts in the history of the two continents.

CHAPTER III

THE GEOGRAPHIC PROVINCES OF NORTH AMERICA

The four great physical divisions of North America — the Laurentian highland, the Appalachian highland, the plains, and the western cordillera — are strikingly different in form and structure. The Laurentian highland presents a monotonous waste of rough hills, irregular valleys, picturesque lakes, and crooked rivers. Most of it is thinly clothed with pine trees and bushes such as the blueberry and huckleberry. Yet everywhere the ancient rock crops out. No one can travel there without becoming tiresomely familiar with fine-grained, shattered schists, coarse granites, and their curiously banded relatives, the gneisses. This rocky highland stretches from a little north of the St. Lawrence River to Hudson Bay, around which it laps in the form of a V, and so is known as the Archæan V or shield.

Everywhere this oldest part of the Western

Hemisphere presents unmistakable signs of great age. The schists by their fine crumpling and scaly flakes of mineral show that they were formed deep in the bowels of the earth, for only there could they be subjected to the enormous pressure needed to transform their minerals into sheets as thin as paper. The coarse granites and gneisses proclaim still more clearly that they must have originated far down in the depths of the earth; their huge crystals of mica, quartz, hornblende, feldspar, and other minerals could never have been formed except under a blanket of rock which almost prevented the original magmas from cooling. The thousands or tens of thousands of feet of rock which once overlay the schists and still more the granites and gneisses must have been slowly removed by erosion, for there was no other way to get rid of them. This process must have taken tens of millions of years, and yet the whole work must have been practically completed a hundred or perhaps several hundred million years ago. We know this because the self-same ancient eroded surface which is exposed in the Laurentian highland is found dipping down under the oldest known fossiliferous rocks. Traces of that primitive land surface are found over a large part of the American continent.

Elsewhere they are usually buried under later strata laid down when the continent sank in part below sea-level. Only in Laurentia has the land remained steadily above the reach of the ocean throughout the millions of years.

Today this old, old land might be as rich as many others if climate had been kind to it. Its soil, to be sure, would in many parts be sandy because of the large amount of quartz in the rocks. That would be a small handicap, however, provided the soil were scores of feet deep like the red soil of the corresponding highland in the Guiana region of South America. But today the North American Laurentia has no soil worth mentioning. For some reason not yet understood this was the part of America where snow accumulated most deeply and where the largest glaciers were formed during the last great glacial period. Not once but many times its granite surface was shrouded for tens of thousands of years in ice a mile or more thick. As the ice spread outward in almost every direction, it scraped away the soil and gouged innumerable hollows in the softer parts of the underlying rock. It left the Laurentian highland a land of rocky ribs rising between clear lakes that fill the hollows. The lakes are drained by rapid rivers

which wind this way and that in hopeless confusion as they strive to move seaward over the strangely uneven surface left by the ice. Such a land is good for the hunter and trapper. It is also good for the summer pleasure-seeker who would fain grow strong by paddling a canoe. For the man who would make a permanent home it is a rough, inscrutable region where one has need of more than most men's share of courage and persistence. Not only did the climate of the past cause the ice to scrape away the soil, but the climate of the present is so cold that even where new soil has accumulated the farmer can scarcely make a living.

Around the borders of the Laurentian highland the ice accomplished a work quite different from the devastation of the interior. One of its chief activities was the scouring of a series of vast hollows which now hold the world's largest series of lakes. Even the lakes of Central Africa cannot compare with our own Great Lakes and the other smaller lakes which belong to the same series. These additional lakes begin in the far north with Great Bear Lake and continue through Great Slave Lake, Lake Athabasca, and Lake Winnipeg to the Lake of the Woods, not far from Lake Superior. All these lakes lie on the edge of the great Lauren-

tian shield, where the ice, crowding down from the highland to the north and east, was compressed into certain already existent hollows which it widened, deepened, and left as vast bowls ready to be filled with lakes.

South and southwest of the Laurentian highland the great ice sheet proved beneficial to man. There, instead of leaving the rock naked, as in the Laurentian region, it merely smoothed off many of the irregularities of the surface and covered large areas with the most fertile soil.

In doing this, to be sure, the ice-cap scoured some hollows and left a vastly larger number of basins surrounded in whole or in part by glacial débris. These have given rise to the innumerable lakes, large and small, whose beauty so enhances the charms of Canada, New England, New York, Minnesota, and other States. They serve as reservoirs for the water supply of towns and power plants and as sources of ice and fish. Though they take land from agriculture, they probably add to the life of the community as much in other ways as they detract in this. Moreover glaciation diverted countless streams from their old courses and made them flow over falls and rapids from which water-power can easily be developed. That is one

reason why glaciated New England contains over forty per cent of all the developed water-power in the United States.

Far more important, however, than the glacial lakes and rivers is the fertile glacial soil. It comes fresh from the original rocks and has not yet been exhausted by hundreds of thousands of years of weathering. It also has the advantage of being well mixed, for generally it is the product of scrapings from many kinds of rocks, each of which contributes its own particular excellence to the general composition. Take Wisconsin as an example.[1] Most parts of that State have been glaciated, but in the southwest there lies what is known as the "driftless area" because it is not covered with the "drift" or glacial débris which is thickly strewn over the rest of the State. A comparison of otherwise similar counties lying within and without the driftless area shows an astonishing contrast. In 1910 the average value of all the farm land in twenty counties covered with drift amounted to $56.90 per acre. In six counties partly covered with drift and partly driftless the value was $59.80

[1] R. H. Whitbeck, *Economic Aspects of Glaciation in Wisconsin*, in *Annals of the Association of American Geographers*, vol. III (1913), pp. 62–67.

per acre, while in thirteen counties in the driftless area it was only $33.30 per acre. In spite of the fact that glaciation causes swamps and lakes, the proportion of land cultivated in the glaciated areas is larger than in the driftless. In the glaciated area 61 per cent of the land is improved and in the driftless area only 43.5 per cent. Moreover, even though the underlying rock and the original topography be of the same kind in both cases, the average yield of crops per acre is greater where the ice has done its work. Where the country rock consists of limestone, which naturally forms a rich soil, the difference in favor of the glaciated area amounts to only 1 or 2 per cent. Where the country rock is sandy, the soil is so much improved by a mixture of fertilizing limestone or even of clay and other materials that the average yield of crops per acre in the glaciated areas is a third larger than in the driftless. Taking everything into consideration it appears that the ancient glaciation of Wisconsin increases the present agricultural output by from 20 to 40 per cent. Upwards of 10,000,000 acres of glaciated land have already been developed in the most populous parts of the State. If the average value of all products on this area is reckoned at $15 per acre and if the increased value of agricul-

tural products due to glaciation amounts to 30 per cent, then the net value of glaciation per year to the farmers of Wisconsin is $45,000,000. This means about $300 for each farmer in the glaciated area.

Wisconsin is by no means unique. In Ohio, for instance, there is also a driftless area.[1] It lies in the southeast along the Ohio River. The difference in the value of the farm land there and in the glaciated region is extraordinary. In the driftless area the average value per acre in 1910 was less than $24, while in the glaciated area it was nearly $64. Year by year the proportion of the population of the State in the unglaciated area is steadily decreasing. The difference between the two parts of the State is not due to the underlying rock structure or to the rainfall except to a slight degree. Some of the difference is due to the fact that important cities such as Cleveland and Toledo lie on the fertile level strip of land along the lake shore, but this strip itself, as well as the lake, owes much of its character to glaciation. It appears, therefore, that in Ohio, perhaps even more than in Wisconsin, man prospers most in the parts where the ice has done its work.

[1] William H. Hess, *The Influence of Glaciation in Ohio*, in *Bulletin of the Geographical Society of Philadelphia*, vol. xv (1917), pp. 19–42.

We have taken Wisconsin and Ohio as examples, but the effect of glaciation in those States does not differ materially from its effect all over southern Canada and the northern United States from New England to Kansas and Minnesota. Each year the people of these regions are richer by perhaps a billion dollars because the ice scraped its way down from Laurentia and spread out over the borders of the great plains on the west and of the Appalachian region on the east.

We have considered the Laurentian highland and the glaciation which centered there. Let us now turn to another highland only the northern part of which was glaciated. The Appalachian highland, the second great division of North America, consists of three parallel bands which extend southwestward from Newfoundland and the St. Lawrence River to Georgia and Alabama. The eastern and most important band consists of hills and mountains of ancient crystalline rocks, somewhat resembling those of the Laurentian highland but by no means so old. West of this comes a broad valley eroded for the most part in the softer portions of a highly folded series of sedimentary rocks which are of great age but younger than the

crystalline rocks to the east. The third band is the Alleghany plateau, composed of almost horizontal rocks which lie so high and have been so deeply dissected that they are often called mountains.

The three Appalachian bands by no means preserve a uniform character throughout their entire length. The eastern crystalline band has its chief development in the northeast. There it comprises the whole of New England and a large part of the maritime provinces of Canada as well as Newfoundland. Its broad development in New England causes that region to be one of the most clearly defined natural units of the United States. Ancient igneous rocks such as granite lie intricately mingled with old and highly metamorphosed sediments. Since some of the rocks are hard and others soft and since all have been exposed to extremely long erosion, the topography of New England consists typically of irregular masses of rounded hills free from precipices. Here and there hard masses of unusually resistant rock stand up as isolated rounded heights, like Mount Katahdin in Maine. They are known as "monadnocks" from the mountain of that name in southern New Hampshire. In other places larger and more irregular masses of hard rock form mountain groups like the White

Mountains, the Green Mountains, and the Berkshires, each of which is merely a great series of monadnocks.

In the latitude of southern New York the crystalline rocks are compressed into narrow compass and lose their mountainous character. They form the irregular hills on which New York City itself is built and which make the suburbs of Westchester County along the eastern Hudson so diverse and beautiful. To the southeast the topography of the old crystalline band becomes still less pronounced, as may be seen in the rolling, fertile hills around Philadelphia. Farther south the band divides into two parts, the mountains proper and the Piedmont plateau. The mountains begin at the Blue Ridge, which in Virginia raises its even-topped heights mile after mile across the length of that State. In North Carolina, however, they lose their character as a single ridge and expand into the broad mass of the southern Appalachians. There Mount Mitchell dominates the eastern part of the American continent and is surrounded by over thirty other mountains rising to a height of at least six thousand feet. The Piedmont plateau, which lies at the eastern foot of the Blue Ridge, is not really a plateau but a peneplain or ancient lowland worn

almost to a plain. It expands to a width of one hundred miles in Virginia and the Carolinas and forms the part of those States where most of the larger towns are situated. Among its low gentle heights there rises an occasional little monadnock like Chapel Hill, where the University of North Carolina lies on a rugged eminence which strikingly recalls New England. For the most part, however, the hills of the Piedmont region are lower and more rounded than those in the neighborhood of Philadelphia. The country thus formed has many advantages, for it is flat enough to be used for agriculture and yet varied enough to be free from the monotony of the level plains.

The prolonged and broken inner valley forming the second band of the Appalachians was of some importance as a highway in the days of the Indians. Today the main highways of traffic touch it only to cross it as quickly as possible. From Lake Champlain it trends straight southward in the Hudson Valley until the Catskills have been passed. Then, while the railroads and all the traffic go on down the gorge of the Hudson to New York, the valley swings off into Pennsylvania past Scranton, Wilkesbarre, and Harrisburg. There the underlying rock consists of a series of alternately hard

and soft layers which have been crumpled up much as one might wrinkle a rug with one's foot. The pressure involved in the process changed and hardened the rocks so much that the coal which they contain was converted into anthracite, the finest coal in all the world and the only example of its kind. Even the famous Welsh coal has not been so thoroughly hardened. During a long period of erosion the tops of the folded layers were worn off to a depth of thousands of feet and the whole country was converted into an almost level plain. Then in the late geological period known as the early Tertiary the land was lifted up again, and once more erosion went on. The soft rocks were thus etched away until broad valleys were formed. The hard layers were left as a bewildering succession of ridges with flat tops. A single ridge may double back and forth so often that the region well deserves the old Indian name of the "Endless Mountains." Southwestward the valley grows narrower, and the ridges which break its surface become straighter. Everywhere they are flat-topped, steep-sided, and narrow, while between them lie parts of the main valley floor, flat and fertile. Here in the south, even more clearly than in the north, the valley is bordered on the east by the sharply upstanding

range of the crystalline Appalachians, while on the west with equal regularity it comes to an end in an escarpment which rises to the Alleghany plateau.

This plateau, the third great band of the Appalachians, begins on the south side of the Mohawk Valley. To the north its place is taken by the Adirondacks, which are an outlier of the great Laurentian area of Canada. The fact that the outlier and the plateau are separated by the low strip of the Mohawk Valley makes this the one place where the highly complex Appalachian system can easily be crossed. If the Alleghany plateau joined the Adirondacks, Philadelphia instead of New York would be the greatest city of America. Where the plateau first rises on the south side of the Mohawk, it attains heights of four thousand feet in the Catskill Mountains. We think of the Catskills as mountains, but their steep cliffs and table-topped heights show that they are really the remnants of a plateau, the nearly horizontal strata of which have not yet been worn away. Westward from the Catskills the plateau continues through central New York to western Pennsylvania. Those who have traveled on the Pennsylvania Railroad may remember how the railroad climbs the escarpment at Altoona. Farther east the train

has passed alternately through gorges cut in the parallel ridges and through fertile open valleys forming the main floor of the inner valley. Then it winds up the long ascent of the Alleghany front in a splendid horseshoe curve. At the top, after a short tunnel, the train emerges in a wholly different country. The valleys are without order or system. They wind this way and that. The hills are not long ridges but isolated bits left between the winding valleys. Here and there beds of coal blacken the surface, for here we are among the rocks from which the world's largest coal supply is derived. Since the layers lie horizontally and have never been compressed, the same material which in the inner valley has been changed to hard, clean-burning anthracite here remains soft and smoky.

In its southwestern continuation through West Virginia and Kentucky to Tennessee the plateau maintains many of its Pennsylvanian characteristics, but it now rises higher and becomes more inaccessible. The only habitable portions are the bottoms of the valleys, but they are only wide enough to support a most scanty population. Between them most of the land is too rough for anything except forests. Hence the people who live at the bottoms of the valleys are strangely isolated.

They see little or nothing of the world at large or even of their neighbors. The roads are so few and the trails so difficult that the farmers cannot easily take their produce to market. Their only recourse has been to convert their bulky corn into whisky, which occupied little space in proportion to its value. Since the mountaineer has no other means of getting ready money, it is not strange that he has become a moonshiner and has fought bitterly for what he genuinely believed to be his rights in that occupation. Education has not prospered on the plateau because the narrowness of the valleys causes the population to be too poor and too scattered to support schools. For the same reason feuds grow up. When people live by themselves they become suspicious. Not being used to dealing with their neighbors, they suspect the motives of all but their intimate friends. Moreover, in those deep valleys, with their steep sides and their general inaccessibility, laws cannot easily be enforced, and therefore each family takes the law into its own hands.

Today the more rugged parts of the Appalachian system are chiefly important as a hindrance to communication. On the Atlantic slope of the old crystalline band there are great areas of gentle relief where an abundant population can dwell.

Westward on the edges of the plateau and the plains beyond a still greater population can find a living, but in the intervening space there is opportunity for only a few. The great problem is to cross the mountains as easily as possible. Each accessible crossing-place is associated with a city. Boston, as well as New York, owes much to the low Mohawk-Hudson route, but is badly handicapped because it has no easy means of crossing the eastern crystalline band. Philadelphia, on the other hand, benefits from the fact that in its vicinity the crystallines are low and can readily be crossed even without the aid of the valleys of the Delaware and Schuylkill rivers. It is handicapped, however, by the Alleghany escarpment at Altoona, even though this is lower there than farther south. Baltimore, in the same way, owes much of its growth to the easy pathways of the Susquehanna on the north and the Potomac on the south. Farther south both the crystalline band and the Alleghany plateau become more difficult to traverse, so that communication between the Atlantic coast and the Mississippi Valley is reduced to small proportions. Happy is New York in its situation where no one of the three bands of the Appalachians opposes any obstacle.

The plains of North America form the third of the four main physical divisions of the continent. For the most part they lie between the great western cordillera on one side and the Laurentian and Appalachian highlands on the other. Yet they lap around the southern end of the Appalachians and run far up the Atlantic coast to New York. They remained beneath the sea till a late date, much later than the other three divisions. They were not, however, covered with deep water like that of the abysmal oceans, but only with shallow seas from which the land at times emerged. In spite of the old belief to the contrary, the continents appear to be so permanent that they have occupied practically their present positions from the remotest geological times. They have moved slowly up and down, however, so that some parts have frequently been submerged, and the plains are the parts that remained longest under water.

The plains of North America may be divided into four parts according to the character of their surface: the Atlantic coastal plain, the prairies, the northwestern peneplain, and the southwestern high plains. The Atlantic coastal plain lies along the Atlantic coast from New York southward to Florida and Alabama. It also forms a great em-

bayment up the Mississippi Valley as far as the Ohio River, and it extends along the shore of the Gulf of Mexico to the Rio Grande. The chief characteristic of this Atlantic and Gulf coastal plain is its belted nature. One layer of rocks is sandy, another consists of limestone, and a third of clay. When uplifted and eroded each assumes its own special topography and is covered with its own special type of vegetation. Thus in South Carolina and Georgia the crystalline Piedmont band of the Appalachian province is bordered on the southeast by a belt of sandstone. This rock is so far from the sea and has been raised so high above it that erosion has converted it into a region of gentle hills, whose tops are six hundred or seven hundred feet above sea-level. Its sandy soil is so poor that farming is difficult. The hills are largely covered with pine, yielding tar and turpentine. Farther seaward comes a broad band of younger rock which forms a clayey soil or else a yellow sandy loam. These soils are so rich that splendid cotton crops can be raised, and hence the region is thickly populated. Again there comes a belt of sand, the so-called "pine barrens," which form a poor section about fifty miles inland from the coast. Finally the coastal belt itself has emerged from

beneath the sea so recently and lies so nearly at sea-level that it has not been greatly eroded, and is still covered with numerous marshes and swamps. The rich soil and the moisture are good for rice, but the region is so unhealthy and so hard to drain that only small parts are inhabited.

Everywhere in the coastal plain this same belted character is more or less evident. It has much to do with all sorts of activities from farming to politics. On consulting the map showing the cotton production of the United States in 1914, one notices the two dark bands in the southeast. One of them, extending from the northwestern part of South Carolina across Georgia and Alabama, is due to the fertile soil of the Piedmont region. The other, lying nearer the sea, begins in North Carolina and extends well into Alabama before it swings around to the northwest toward the area of heavy production along the Mississippi. It is due to the fertile soil of that part of the coastal plain known as the "cotton belt." Portions of it are called the "black belt," not because of the colored population, but because of the darkness of the soil. Since this land has always been prosperous, it has regularly been conservative in politics.

The Atlantic coastal plain is by no means the

only part of the United States where the fertility of the soil is the dominant fact in the life of the people. Because of their rich soil the prairies which extend from western Ohio to the Missouri River and northward into Canada are fast becoming the most steadily prosperous part of America. They owe their surpassing richness largely to glaciation. We have already seen how the coming of the ice-sheet benefited the regions on the borders of the old Laurentian highland. This same benefit extended over practically the whole of what are now the prairies. Before the advent of the ice the whole section consisted of a broadly banded coastal plain much older than that of the Atlantic coast. When the ice with its burden of material scraped from the hills of the north passed over the coastal plain, it filled the hollows with rich new soil. The icy streams that flowed out from the glaciers were full of fine sediment, which they deposited over enormous flood plains. During dry seasons the winds picked up this dust and spread it out still more widely, forming the great banks of yellow loess whose fertile soil mantles the sides of many a valley in the Mississippi basin. Thus glaciers, streams, and winds laid down ten, twenty, fifty, or even one hundred feet of the finest, most fertile soil.

We have already seen how much the soil was improved by glaciation in Wisconsin and Ohio. It was in the prairie States that this improvement reached a maximum. The soil there is not only fine grained and free from rocks, but it consists of particles brought from widely different sources and is therefore full of all kinds of plant foods. In most parts of the world a fine-grained soil is formed only after a prolonged period of weathering which leaches out many valuable chemical elements. In the prairies, however, the soil consists largely of materials that were mechanically ground to dust by the ice without being exposed to the action of weathering. Thus they have reached their present resting-places without the loss of any of their original plant foods. When such a soil is found with a climate which is good for crops and which is also highly stimulating to man, the combination is almost ideal. There is some justification for those who say that the north central portion of the United States is more fortunate than any other part of the earth. Nowhere else, unless in western Europe, is there such a combination of fertile soil, fine climate, easy communication, and possibilities for manufacturing and commerce. Iron from that outlier of the Laurentian highland which

forms the peninsula of northern Michigan can easily be brought by water almost to the center of the prairie region. Coal in vast quantities lies directly under the surface of this region, for the rock of the ancient coastal plain belongs to the same Pennsylvanian series which yields most of the world's coal. Here man is, indeed, blessed with resources and opportunities scarcely equaled in any other part of the world, and finds the only drawbacks to be the extremes of temperature in both winter and summer and the remoteness of the region from the sea. Because of the richness of their heritage and because they live safely protected from threats of foreign aggression, the people who live in this part of the world are in danger of being slow to feel the currents of great world movements.

The western half of the plains of North America consists of two parts unlike either the Atlantic coastal plain or the prairies. From South Dakota and Nebraska northward far into Canada and westward to the Rocky Mountains there extends an ancient peneplain worn down to gentle relief by the erosion of millions of years. It is not so level as the plains farther east nor so low. Its western margin reaches heights of four or five

thousand feet. Here and there, especially on the western side, it rises to the crest of a rugged escarpment where some resistant layer of rocks still holds itself up against the forces of erosion. Elsewhere its smooth surfaces are broken by lava-capped mesas or by ridges where some ancient volcanic dike is so hard that it has not yet been worn away. The soil, though excellent, is thinner and less fertile than in the prairies. Nevertheless the population might in time become as dense and prosperous as almost any in the world if only the rainfall were more abundant and good supplies of coal were not quite so far away. Yet in spite of these handicaps the northwestern peneplain with its vast open stretches, its cattle, its wheat, and its opportunities is a most attractive land.

South of Nebraska and Wyoming the "high plains," the last of the four great divisions of the plains, extend as far as western Texas. These, like the prairies, have been built up by deposits brought from other regions. In this case, however, the deposits consist of gravel, sand, and silt which the rivers have gradually washed out from the Rocky Mountains. As the rivers have changed their courses from one bed to another, layer after layer has been laid down to form a vast plain like a

gently sloping beach hundreds of miles wide. In most places the streams are no longer building this up. Frequently they have carved narrow valleys hundreds of feet deep in the materials which they formerly deposited. Elsewhere, however, as in western Kansas, most of the country is so flat that the horizon is like that of the ocean. It seems almost incredible that at heights of four or five thousand feet the plains can still be so wonderfully level. When the grass is green, when the spring flowers are at their best, it would be hard to find a picture of greater beauty. Here the buffalo wandered in the days before the white man destroyed them. Here today is the great cattle region of America. Here is the region where the soul of man is filled with the feeling of infinite space.

To the student of land forms there is an ever-present contrast between those due directly to the processes which build up the earth's surface and those due to the erosive forces which destroy what the others have built. In the great plains of North America two of the divisions, that is, the Atlantic coastal plain of the southeast and the peneplain of the northwest, owe their present form to the forces of erosion. The other two, that is, the

prairies and the high plains, still bear the impress of the original processes of deposition and have been modified to only a slight extent by erosion.

A similar but greater contrast separates the mountains of eastern North America and those of the western cordillera — the fourth and last of the main physical divisions of the continent. In both the Laurentian and the Appalachian highlands the eastern mountains show no trace of the original forms produced by the faulting of the crust or by volcanic movements. All the original distinctive topography has been removed. What we see today is the product of erosion working upon rocks that were thousands of feet beneath the surface when they were brought to their present positions. In the western cordillera, on the contrary, although much of the present form of the land is due to erosion, a vast amount is due directly to so-called "tectonic" activities such as the breaking of the crust, the pouring out of molten lavas, and the bursting forth of explosive eruptions.

The character of these tectonic activities has differed widely in different parts of the cordillera. A broad upheaval of great blocks of the earth's crust without tilting or disturbance has produced the plateaus of Arizona and Utah. The gorges that

have been rapidly cut into such great upheaved blocks form part of the world's most striking scenery. The Grand Canyon of the Colorado with its tremendous platforms, mesas, and awe-inspiring cliffs could have been formed in no other way. Equally wonderful are some of the narrow canyons in the broadly upheaved plateaus of southern Utah where the tributaries of the Virgin and other rivers have cut red or white chasms thousands of feet deep and so narrow that at their bottoms perpetual twilight reigns. It is a curious proof of the fallibility of human judgment that these great gorges are often cited as the most striking examples of the power of erosion. Wonderful as these gorges certainly are, the Piedmont plain or the northwestern peneplain is far more wonderful. Those regions had their grand canyons once upon a time, but now erosion has gone so far that it has reduced the whole area to the level of the bottoms of the gorges. Though such a fate is in store for all the marvelous scenery of the western cordillera, we have it, for the present at least, as one of the most stimulating panoramas of our American environment. No man worthy of the name can sit on the brink of a great canyon or gaze up from the dark depths of a gorge without a sense of awe and

wonder. There, as in few other places, Nature shows with unmistakable grandeur the marvelous power and certainty with which her laws work out the destiny of the universe.

In other parts of the great American cordillera some of the simplest and youngest mountain ridges in the world are found. In southern Oregon, for example, lava blocks have been broken and uplifted and now stand with steep fresh faces on one side and with the old surface inclining more gently on the other. Tilted blocks on a larger scale and much more deeply carved by erosion are found in the lofty St. Elias Mountain of Alaska, where much of the erosion has been done by some of the world's greatest glaciers. The western slope of the Wasatch Mountains facing the desert of Utah is the wall of a huge fracture, as is the eastern face of the Sierra Nevadas facing the deserts of Nevada. Each of these great faces has been deeply eroded. At the base, however, recent breaking and upheaval of the crust have given rise to fresh uneroded slopes. Some take the form of triangular facets, where a series of ridges has been sliced across and lifted up by a great fault. Others assume the shape of terraces which sometimes continue along the base of the mountains for scores of

miles. In places they seem like bluffs cut by an ancient lake, but suddenly they change their altitude or pass from one drainage area to another as no lake-formed strand could possibly do.

In other parts of the cordillera, mountains have been formed by a single arching of the crust without any breaking. Such is the case in the Uinta Mountains of northwestern Utah and in some of the ranges of the Rocky Mountains in Colorado. The Black Hills of South Dakota, although lying out in the plains, are an example of the same kind of structure and really belong to the cordillera. In them the layers of the earth's crust have been bent up in the form of a great dome. The dome structure, to be sure, has now been largely destroyed, for erosion has long been active. The result is that the harder strata form a series of concentric ridges, while between them are ring-shaped valleys, one of which is so level and unbroken that it is known to the Indians as the "race-course." In other parts of the cordillera great masses of rock have been pushed horizontally upon the tops of others. In Montana, for example, the strata of the plains have been bent down and overridden by those of the mountains. These are only a few of the countless forms of breaking, faulting, and crumpling which

have given to the cordillera an almost infinite variety of scenery.

The work of mountain building is still active in the western cordillera, as is evident from such an event as the San Francisco earthquake. In the Owens Valley region in southern California the gravelly beaches of old lakes are rent by fissures made within a few years by earthquakes. In other places fresh terraces on the sides of the valley mark the lines of recent earth movements, while newly formed lakes lie in troughs at their base. These Owens Valley movements of the crust are parts of the stupendous uplift which has raised the Sierra Nevada to heights of over 14,000 feet a few miles to the west. Along the fault line at the base of the mountains there runs for over 250 miles the world's longest aqueduct, which was built to relieve Los Angeles from the danger of drought. It is a strange irony of fate that so delicate and so vital an artery of civilization should be forced to lie where a renewal of earthquake movements may break it at any time. Yet there was no other place to put it, for in spite of man's growing control of nature he was forced to follow the topography of the region in which he lived and labored.

On the southern side of the Mohave Desert a

little to the east of where the Los Angeles aqueduct crosses the mountains in its southward course, the record of an earthquake is preserved in unique fashion. The steep face of a terrace is covered with trees forty or fifty years old. Near the base the trees are bent in peculiar fashion. Their lower portions stand at right angles to the steeply sloping face of the terrace, but after a few feet the trunks bend upward and stand vertically. Clearly when these trees were young the terrace was not there. Then an earthquake came. One block of the earth's crust was dropped down while another was raised up. Along the dividing line a terrace was formed. The trees that happened to stand along the line were tilted and left in a slanting position on the sloping surface between the two parts of the earth's crust. They saw no reason to stop growing, but, turning their tips toward the sky, they bravely pushed upward. Thus they preserve in a striking way the record of this recent movement of the earth's crust.

Volcanoes as well as earth movements have occurred on a grand scale within a few hundred years in the cordillera. Even where there is today no visible volcanic activity, recent eruptions have left traces as fresh as if they had occurred but

yesterday. On the borders of the Grand Canyon of the Colorado one can see not only fresh cones of volcanic ash but lava which has poured over the edges of the cliffs and hardened while in the act of flowing. From Orizaba and Popocatepetl in Mexico through Mount San Francisco in Arizona, Lassen Peak and Mount Shasta in California, Mount Rainier with its glaciers in the Cascade Range of Washington, and Mount Wrangell in Alaska, the cordillera contains an almost unbroken chain of great volcanoes. All are either active at present or have been active within very recent times. In 1912 Mount Katmai, near the northwestern end of the volcanic chain, erupted so violently that it sent dust around the whole world. The presence of the dust caused brilliant sunsets second only to those due to Krakatoa in 1883. It also cut off so much sunlight that the effect was felt in measurements made by the Smithsonian Institution in the French provinces of North Africa. In earlier times, throughout the length of the cordillera great masses of volcanic material were poured out to form high plateaus like those of southern Mexico or of the Columbia River in Oregon. In Utah some of these have been lifted up so that heavy caps of lava now form isolated sheets

topping lofty plateaus. There the lowland shepherds drive their sheep in summer and live in absolute isolation for months at a time. There, as everywhere, the cordillera bears the marks of mountains in the making, while the mountains of eastern America bear the marks of those that were made when the world was young.

The geysers and hot springs of the Yellowstone are another proof of recent volcanic activity. They owe their existence to hot rocks which lie only a little way below the surface and which not long ago were molten lava. The terraces and platforms built by the geysers are another evidence that the cordillera is a region where the surface of the earth is still being shaped into new forms by forces acting from within. The physical features of the country are still in process of construction.

In spite of the importance of the constructive forces which are still building up the mountains, much of the finest scenery of the cordillera is due to the destructive forces of erosion. The majestic Columbia Canyon, like others of its kind, is the work of running water. Glaciers also have done their part. During the glacial period the forces which control the paths of storms did not give to the cordillera region such an abundance of snow

as was sifted down upon Laurentia. Therefore no such huge continental glaciers have flowed out over millions of square miles of lower country. Nevertheless among the mountains themselves the ice gouged and scraped and smoothed and at its lower edges deposited great moraines. Its work today makes the cliffs and falls of the Yosemite one of the world's most famous bits of scenery. This scenery is young and its beauty will pass in a short time as geology counts the years, for in natural scenery as in human life it is youth that makes beauty. The canyons, waterfalls, and geysers of the cordillera share their youth with the lakes, waterfalls, and rapids due to recent glaciation in the east. Nevertheless, though youth is the condition of most striking beauty, maturity and old age are the condition of greatest usefulness. The young cordillera with its mountains still in the making can support only a scanty population, whereas the old eastern mountains, with the lines of long life engraved upon every feature, open their arms to man and let him live and prosper.

It is not enough that we should picture merely the four divisions of the land of our continent. We must see how the land meets the sea. In low

latitudes in both the Old World and the New, the continents have tended to emerge farther and farther from the sea during recent geological times. Hence on the eastern side of both North and South America from New Jersey to Brazil the ocean is bordered for the most part by coastal plains, uplifted from the sea only a short time ago. On the mountainous western side of both continents, however, the sea bottom shelves downward so steeply that its emergence does not give rise to a plain but merely to a steep slope on which lie a series of old beaches several hundred and even one thousand feet above the present shore line. Such conditions are not favorable to human progress. The coastal plains produced by uplift of the land may be fertile and may furnish happy homes for man, but they do not permit ready access to the sea because they have no harbors. The chief harbor of Mexico at Vera Cruz is merely a little nick in the coast-line and could never protect a great fleet, even with the help of its breakwater. Where an enterprising city like Los Angeles lies on the uplifted Pacific coast, it must spend millions in wresting a harbor from the very jaws of the sea.

In high latitudes in all parts of the world the land has recently been submerged beneath the sea.

In some places, especially those like the coasts of Virginia and central California which lie in middle latitudes, a recent slight submergence has succeeded a previous large emergence. Wherever such sinking of the land has taken place, it has given rise to countless bays, gulfs, capes, islands, and fiords. The ocean water has entered the valleys and has drowned their lower parts. It has surrounded the bases of hills and left them as islands; it has covered low valleys and has created long sounds where traffic may pass with safety even in great storms. Though much land has thus been lost which would be good for agriculture, commerce has been wonderfully stimulated. Through Long Island Sound there pass each day hundreds of boats which again and again would suffer distress and loss if they were not protected from the open sea. It is no accident that of the eight largest metropolitan districts in the United States five have grown up on the shores of deep inlets which are due to the drowning of valleys.

Nor must the value of scenery be forgotten in a survey such as this. Year by year we are learning that in this restless, strenuous American life of ours vacations are essential. We are learning, too, that the love of beauty is one of Nature's greatest

healers. Regions like the coast of Maine and Puget Sound, where rugged land and life-giving ocean interlock, are worth untold millions because of their inspiring beauty. It is indeed marvelous that in the latitude of the northern United States and southern Canada so many circumstances favorable to human happiness are combined. Fertile soil, level plains, easy passage across the mountains, coal, iron, and other metals imbedded in the rocks, and a stimulating climate, all shower their blessings upon man. And with all these blessings goes the advantage of a coast which welcomes the mariner and brings the stimulus of foreign lands, while at the same time it affords rest and inspiration to the toilers here at home.

CHAPTER IV

THE GARMENT OF VEGETATION

No part of the world can be truly understood without a knowledge of its garment of vegetation, for this determines not only the nature of the animal inhabitants but also the occupations of the majority of human beings. Although the soil has much to do with the character of vegetation, climate has infinitely more. It is temperature which causes the moss and lichens of the barren tundras in the far north to be replaced by orchids, twining vines, and mahogany trees near the equator. It is rainfall which determines that vigorous forests shall grow in the Appalachians in latitudes where grass-lands prevail in the plains and deserts in the western cordillera.

Forests, grass-lands, deserts, represent the three chief types of vegetation on the surface of the earth. Each is a response to certain well-defined conditions of climate. Forests demand an abundance of

moisture throughout the entire season of growth. Where this season lasts only three months the forest is very different from where it lasts twelve. But no forest can be vigorous if the ground habitually becomes dry for a considerable period during which the weather is warm enough for growth. Desert vegetation, on the other hand, which consists primarily of bushes with small, drought-resistant leaves, needs only a few irregular and infrequent showers in order to endure long periods of heat and drought. Discontinuity of moisture is the cause of deserts, just as continuity is the necessary condition of forest growth. Grasses prevail where the climatic conditions are intermediate between those of the forest and the desert. Their primary requisite is a short period of fairly abundant moisture with warmth enough to ripen their seeds. Unlike the trees of the forests, they thrive even though the wet period be only a fraction of the entire time that is warm enough for growth. Unlike the bushes of the desert, they rarely thrive unless the ground is well soaked for at least a few weeks.

Most people think of forests as offering far more variety than either deserts or grass-lands. To them grass is just grass, while trees seem to possess

individuality. In reality, however, the short turfy grass of the far north differs from the four-foot fronds of the bunchy saccaton grass of Arizona, and from the far taller tufts of the plumed pampas grass, much more than the pine tree differs from the palm. Deserts vary even more than either forests or grass-lands. The traveler in the Arizona desert, for example, has been jogging across a gravelly plain studded at intervals of a few yards with little bushes a foot high. The scenery is so monotonous and the noon sunshine so warm that he almost falls asleep. When he wakes from his day-dream, so weird are his surroundings that he thinks he must be in one of the places to which Sindbad was carried by the roc. The trail has entered an open forest of joshuas, as the big tree yuccas are called in Arizona. Their shaggy trunks and uncouth branches are rendered doubly unkempt by sword-like, ashy-yellow dead leaves that double back on the trunk but refuse to fall to the ground. At a height of from twelve to twenty feet each arm of the many-branched candelabrum ends in a stiff rosette of gray-green spiky leaves as tough as hemp. Equally bizarre and much more imposing is a desert "stand" of giant suhuaros, great fluted tree-cacti thirty feet or more high. In spite of their

size the suhuaros are desert types as truly as is sagebrush.

In America the most widespread type of forest is the evergreen coniferous woodland of the north. Its pines, firs, spruces, hemlocks, and cedars which are really junipers, cover most of Canada together with northern New England and the region south of Lakes Huron and Superior. At its northern limit the forest looks thoroughly forlorn. The gnarled and stunted trees are thickly studded with half-dead branches bent down by the weight of snow, so that the lower ones sweep the ground, while the upper look tired and discouraged from their struggle with an inclement climate. Farther south, however, the forest loses this aspect of terrific struggle. In Maine, for example, it gives a pleasant impression of comfortable prosperity. Wherever the trees have room to grow, they are full and stocky, and even where they are crowded together their slender upspringing trunks look alert and energetic. The signs of death and decay, indeed, appear everywhere in fallen trunks, dead branches, and decayed masses of wood, but moss and lichens, twinflowers and bunchberries so quickly mantle the prostrate trees that they do not seem like tokens of weakness. Then, too, in every

open space thousands of young trees bank their soft green masses so gracefully that one has an ever-present sense of pleased surprise as he comes upon this younger foliage out of the dim aisles among the bigger trees.

Except on their southern borders the great northern forests are not good as a permanent home for man. The snow lies so late in the spring and the summers are so short and cool that agriculture does not prosper. As a home for the fox, marten, weasel, beaver, and many other fur-bearing animals, however, the coniferous forests are almost ideal. That is why the Hudson's Bay Company is one of the few great organizations which have persisted and prospered from colonial times to the present. As long ago as 1670 Charles II granted to Prince Rupert and seventeen noblemen and gentlemen a charter so sweeping that, aside from their own powers of assimilation, there was almost no limit to what the "Governor and Company of Adventurers of England trading into Hudson's Bay" might acquire. By 1749, nearly eighty years after the granting of the charter, however, the Company had only four or five forts on the coast of Hudson Bay, with about 120 regular employees. Nevertheless the poor Indians were

so ignorant of the value of their furs and the consequent profits were so large that, after Canada had been ceded to Great Britain in 1763, a rival organization, the Northwest Fur Company of Montreal, was established. Then there began an era that was truly terrible for the Indians of the northern forest. In their eagerness to get the valuable furs the companies offered the Indians strong liquors in an abundance that ruined the poor red man, body and soul. Moreover the fur-bearing animals were killed not only in winter but during the breeding season. Many mother animals were shot and their little ones were left to die. Hence in a short time the wild creatures of the great northern forest were so scarce that the Indians well-nigh starved.

In spite of this slaughter of fur-bearing animals, the same Company still draws fat dividends from the northern forest and its furry inhabitants. If the forest had been more habitable, it would long ago have been occupied by settlers, as have its warmer, southern portions, and the Company would have ceased to exist. Aside from the regions too cold or too dry to support any vegetation whatever, few parts of the world are more deadening to civilization than the forests of the far north. Near

the northern limit of the great evergreen forest of North America wild animals are so rare that a family of hunting Indians can scarcely find a living in a thousand square miles. Today the voracious maw of the daily newspaper is eating the spruce and hemlock by means of relentless saws and rattling pulp-mills. In the wake of the lumbermen settlers are tardily spreading northward from the more favored tracts in northern New England and southern Canada. Nevertheless most of the evergreen forests of the north must always remain the home of wild animals and trappers, a backward region in which it is easy for a great fur company to maintain a practical monopoly.

Outliers of the pine forest extend far down into the United States. The easternmost lies in part along the Appalachians and in part along the coastal plain from southern New Jersey to Texas. The coastal forest is unlike the other coniferous forests in two respects, for its distribution and growth are not limited by long winters but by sandy soil which quickly becomes dry. This drier southern pine forest lacks the beauty of its northern companion. Its trees are often tall and stately, but they are usually much scattered and are surrounded by stretches of scanty grass. There is no

trace of the mossy carpet and dense copses of undergrowth that add so much to the picturesqueness of the forests farther north. The unkempt half-breed or Indian hunter is replaced by the prosaic gatherer of turpentine. As the man of the southern forests shuffles along in blue or khaki overalls and carries his buckets from tree to tree, he seems a dull figure contrasted with the active northern hunter who glides swiftly and silently from trap to trap on his rawhide snowshoes. Yet though the southern pine forest may be less picturesque than the northern, it is more useful to man. In spite of its sandy soil, much of this forest land is being reclaimed, and all will some day probably be covered by farms.

Two other outliers of the northern evergreen forest extend southward along the cool heights of the Rocky Mountains and of the Pacific coast ranges of the United States. In the Olympic and Sierra Nevada ranges the most western outlier of this northern band of vegetation probably contains the most inspiring forests of the world. There grow the vigorous Oregon pines, firs, and spruces, and the still more famous Big Trees or sequoias. High on the sides of the Sierra above the yuccas, the live oaks, and the deciduous forest of the lower slopes, one meets these Big Trees. To come upon

them suddenly after a long, rough tramp over the sunny lower slopes is the experience of a lifetime. Upward the great trees rise sheer one hundred feet without a branch. The huge fluted trunks encased in soft, red bark six inches or a foot thick are more impressive than the columns of the grandest cathedral. It seems irreverent to speak above a whisper. Each tree is a new wonder. One has to walk around it and study it to appreciate its enormous size. Where a tree chances to stand isolated so that one can see its full majesty, the sense of awe is tempered by the feeling that in spite of their size the trees have a beauty all their own. Lifted to such heights, the branches appear to be covered with masses of peculiarly soft and rounded foliage like the piled-up banks of a white cumulus cloud before a thunderstorm. At the base of such a tree the eye is caught by the sharp, triangular outline of one of its young progeny. The lower branches sweep the ground. The foliage is harsh and rough. In almost no other species of trees is there such a change from comparatively ungraceful youth to a superbly beautiful old age.

The second great type of American forest is deciduous. The trees have broad leaves quite unlike the slender needles or overlapping scales of

the northern evergreens. Each winter such forests shed their leaves. Among the mountains where the frosts come suddenly, the blaze of glory and brilliance of color which herald the shedding of the leaves are surpassed in no other part of the world. Even the colors of the Painted Desert in northern Arizona and the wonderful flowers of the California plains are less pleasing. In the Painted Desert the patches of red, yellow, gray-blue, white, pale green, and black have a garish, almost repellent appearance. In California the flame-colored acres of poppies in some places, of white or yellow daisy-like flowers in others, or of purple blossoms elsewhere have a softer expression than the bare soil of the desert. Yet they lack the delicate blending and harmony of colors which is the greatest charm of the autumn foliage in the deciduous forests. Even where the forests consist of such trees as birches, beeches, aspens, or sycamores, whose leaves merely turn yellow in the fall, the contrast between this color and the green tint of summer or the bare branches of winter adds a spice of variety which is lacking in other and more monotonous forests.

From still other points of view the deciduous forest has an almost unequaled degree of variety.

In one place it consists of graceful little birches whose white trunks shimmering in the twilight form just the background for ghosts. Contrast them with the oak forest half a mile away. There the sense of gracefulness gives place to a feeling of strength. The lines are no longer vertical but horizontal. The knotted elbows of the branches recall the keels of sturdy merchantmen of bygone days. The acorns under foot suggest food for the herds of half-wild pigs which roam among the trees in many a southern county. Of quite another type are the stately forests of the Appalachians where splendid magnolia and tulip trees spread their broad limbs aloft at heights of one hundred feet or more.

Deciduous forests grow in the well-balanced regions where summer and winter approach equality, where neither is unduly long, and where neither is subject to prolonged drought. They extend southward from central New England, the Great Lakes, and Minnesota, to Mississippi, Arkansas, and eastern Texas. They predominate even in parts of such prairie States as Michigan, Indiana, southern Illinois, and southeastern Missouri. No part of the continent is more populous or more progressive than the regions once covered

by deciduous forests. In the United States nearly sixty per cent of the inhabitants live in areas reclaimed from such forests. Yet the area of the forests is less than a quarter of the three million square miles that make up the United States.

In their relation to human life the forests of America differ far more than do either grass-lands or deserts. In the far north, as we have seen, the pine forests furnish one of the least favorable environments. In middle latitudes the deciduous forests go to the opposite extreme and furnish the most highly favored of the homes of man. Still farther southward the increasing luxuriance of the forests, especially along the Atlantic coast, renders them less and less favorable to mankind. In southern Mexico and Yucatan the stately equatorial rain forest, the most exuberant of all types of vegetation and the most unconquerable by man, makes its appearance. It forms a discontinuous belt along the wet east coast and on the lower slopes of the mountains from southern Yucatan to Venezuela. Then it is interrupted by the grass-lands of the Orinoco, but revives again in still greater magnificence in the Guianas. Thence it stretches not only along the coast but far into the little known interior of the Great Amazon basin,

while southward it borders all the coast as far as southern Brazil. In the Amazon basin it reaches its highest development and becomes the crowning glory of the vegetable world, the most baffling obstacle to human progress.

Except in its evil effects on man, the equatorial rain forest is the antithesis of the forests of the extreme north. The equatorial trees are hardwood giants, broad leaved, bright flowered, and often fruit-bearing. The northern trees are softwood dwarfs, needle-leaved, flowerless, and cone-bearing. The equatorial trees are often branchless for one hundred feet, but spread at the top into a broad overarching canopy which shuts out the sun perpetually. The northern trees form sharp little pyramids with low, widely spreading branches at the base and only short twigs at the top. In the equatorial forests there is almost no underbrush. The animals, such as monkeys, snakes, parrots, and brilliant insects, live chiefly in the lofty tree-tops. In the northern forests there is almost nothing except underbrush, and the foxes, rabbits, weasels, ptarmigans, and mosquitoes live close to the ground in the shelter of the branches. Both forests are alike, however, in being practically uninhabited by man. Each is peopled only by primi-

tive nomadic hunters who stand at the very bottom in the scale of civilization.

Aside from the rain forest there are two other types in tropical countries — jungle and scrub. The distinction between rain forest, jungle, and scrub is due to the amount and the season of rainfall. An understanding of this distinction not only explains many things in the present condition of Latin America but also in the history of pre-Columbian Central America. Forests, as we have seen, require that the ground be moist throughout practically the whole of the season that is warm enough for growth. Since the warm season lasts throughout the year within the tropics, dense forests composed of uniformly large trees corresponding to our oaks, maples, and beeches will not thrive unless the ground is wet most of the time. Of course there may be no rain for a few weeks, but there must be no long and regularly recurrent periods of drought. Smaller trees and such species as the cocoanut palm are much less exacting and will flourish even if there is a dry period of several months. Still smaller, bushy species will thrive even when the rainfall lasts only two or three months. Hence where the rainy season lasts most of the year, rain forest prevails; where the rainy

and dry seasons do not differ greatly in length, tropical jungle is the dominant growth; and where the rainy season is short and the dry season long, the jungle degenerates into scrub or bush.

The relation of scrub, jungle, and rain forest is well illustrated in Yucatan, where the ancient Mayas reared their stately temples. On the northern coast the annual rainfall is only ten or fifteen inches and is concentrated largely in our summer months. There the country is covered with scrubby bushes six to ten feet high. These are beautifully green during the rainy season from June to October, but later in the year lose almost all their leaves. The landscape would be much like that of a thick, bushy pasture in the United States at the same season, were it not that in the late winter and early spring some of the bushes bear brilliant red, yellow, or white flowers. As one goes inland from the north coast of Yucatan the rainfall increases. The bushes become taller and denser, trees twenty feet high become numerous, and many rise thirty or forty feet or even higher. This is the jungle. Its smaller portions suggest a second growth of timber in the deciduous forests of the United States fifteen or twenty years after the cutting of the original forest, but here there

is much more evidence of rapid growth. A few species of bushes and trees may remain green throughout the year, but during the dry season most of the jungle plants lose their leaves, at least in part.

With every mile that one advances into the more rainy interior, the jungle becomes greener and fresher, the density of the lower growths increases, and the proportion of large trees becomes greater until finally jungle gives place to genuine forest. There many of the trees remain green throughout the year. They rise to heights of fifty or sixty feet even on the borders of their province, and at the top form a canopy so thick that the ground is shady most of the time. Even in the drier part of the year when some of the leaves have fallen, the rays of the sun scarcely reach the ground until nine or ten o'clock in the morning. Even at high noon the sunlight straggles through only in small patches. Long, sinuous lianas, often queerly braided, hang down from the trees; epiphytes and various parasitic growths add their strange green and red to the complex variety of vegetation. Young palms grow up almost in a day and block a trail which was hewn out with much labor only a few months before. Wherever the death of old trees forms

an opening, a thousand seedlings begin a fierce race to reach the light. Everywhere the dominant note is intensely vigorous life, rapid growth, and quick decay.

In their effect on man, the three forms of tropical forest are very different. In the genuine rain forest agriculture is almost impossible. Not only does the poor native find himself baffled in the face of Nature, but the white man is equally at a loss. Many things combine to produce this result. Chief among them are malaria and other tropical diseases. When a few miles of railroad were being built through a strip of tropical forest along the coast of eastern Guatemala, it was impossible to keep the laborers more than twenty days at a time; indeed, unless they were sent away at the end of three weeks, they were almost sure to be stricken with virulent malarial fevers from which many died. An equally potent enemy of agriculture is the vegetation itself. Imagine the difficulty of cultivating a garden in a place where the weeds grow all the time and where many of them reach a height of ten or twenty feet in a single year. Perhaps there are people in the world who might cultivate such a region and raise marvelous crops, but they are not the indolent people of tropical Amer-

ica; and it is in fact doubtful whether any kind of people could live permanently in the tropical forest and retain energy enough to carry on cultivation. Nowhere in the world is there such steady, damp heat as in these shadowy, windless depths far below the lofty tops of the rain forest. Nowhere is there greater disinclination to work than among the people who dwell in this region. Consequently in the vast rain forests of the Amazon basin and in similar small forests as far north as Central America, there are today practically no inhabitants except a mere handful of the poorest and most degraded people in the world. Yet in ancient times the northern border of the rain forest was the seat of America's most advanced civilization. The explanation of this contradiction will appear later.[1]

Tropical jungle borders the rain forest all the way from southern Mexico to southern Brazil. It treats man far better than does the rain forest. In marked contrast to its more stately neighbor, it contains abundant game. Wild fruits ripen at almost all seasons. A few banana plants and palm trees will well-nigh support a family. If corn is planted in a clearing, the return is large in proportion to the labor. So long as the population is not

[1] See pp. 169–171.

too dense, life is so easy that there is little to stimulate progress. Hence, although the people of the jungle are fairly numerous, they have never played much part in history. Far more important is the rôle of those living in the tropical lands where scrub is the prevailing growth. In our day, for example, few tropical lowlands are more progressive than the narrow coastal strip of northern Yucatan. There on the border between jungle and scrub the vegetation does not thrive sufficiently to make life easy for the chocolate-colored natives. Effort is required if they would make a living, yet the effort is not so great as to be beyond the capacity of the indolent people of the tropics.

Leaving the forests, let us step out into the broad, breezy grass-lands. One would scarcely expect that a journey poleward out of the forest of northern Canada would lead to an improvement in the conditions of human life, yet such is the case. Where the growing season becomes so short that even the hardiest trees disappear, grassy tundras replace the forest. By furnishing food for such animals as the musk-ox, they are a great help to the handful of scattered Indians who dwell on the northern edge of the forest. In summer, when the

animals grow fat on the short nutritious grass, the Indians follow them out into the open country and hunt them vigorously for food and skins to sustain life through the long dreary winter. In many cases the hunters would advance much farther into the grass-lands were it not that the abundant musk-oxen tempt the Eskimo of the seacoast also to leave their homes and both sides fear bloody encounters.

With the growth of civilization the advantage of the northern grass-lands over the northern forests becomes still more apparent. The domestic reindeer is beginning to replace the wild musk-ox. The reindeer people, like the Indian and Eskimo hunters, must be nomadic. Nevertheless their mode of life permits them to live in much greater numbers and on a much higher plane of civilization than the hunters. Since they hunt the fur-bearing animals in the neighboring forests during the winter, they diminish the food supply of the hunters who dwell permanently in the forest, and thus make their life still more difficult. The northern forests bid fair to decline in population rather than increase. In this New World of ours, strange as it may seem, the almost uninhabited forest regions of the far north and of the equator are

probably more than twice as large as the desert areas with equally sparse population.

South of the tundras the grass-lands have a still greater advantage over the forests. In the forest region of the Laurentian highland abundant snow lasts far into the spring and keeps the ground so wet and cold that no crops can be raised. Moreover, because of the still greater abundance of snow in former times, the largest of ice sheets, as we have seen, accumulated there during the Glacial Period and scraped away most of the soil. The grassy plains, on the contrary, are favored not only by a deep, rich soil, much of which was laid down by the ice, but by the relative absence of snow in winter and the consequent rapidity with which the ground becomes warm in the spring. Hence the Canadian plains from the United States boundary northward to latitude 57° contain a prosperous agricultural population of over a million people, while the far larger forested areas in the same latitude support only a few thousand.

The question is often asked why, in a state of nature, trees are so scarce on the prairies — in Iowa, for instance — although they thrive when planted. In answer we are often told that up to the middle of the nineteenth century such vast

herds of buffaloes roamed the prairies that seedling trees could never get a chance to grow. It is also said that prairie fires sweeping across the plains destroyed the little trees whenever they sprouted. Doubtless the buffaloes and the fires helped to prevent forest growth, but another factor appears to be still more important. All the States between the Mississippi River and the Rocky Mountains receive much more rain in summer than in winter. But as the soil is comparatively dry in the spring when the trees begin their growth, they are handicapped. They could grow if nothing else interfered with them, just as peas will grow in a garden if the weeds are kept out. If peas, however, are left uncared for, the weeds gain the upper hand and there are no peas the second year. If the weeds are left to contend with grass, the grass in the end prevails. In the eastern forest region, if the grass be left to itself, small trees soon spring up in its midst. In half a century a field of grass goes back to forest because trees are especially favored by the climate. In the same way in the prairies, grass is especially favored, for it is not weakened by the spring drought, and it grows abundantly until it forms the wonderful stretches of waving green where the buffalo once grew fat. Moreover the

fine glacial soil of the prairies is so clayey and compact that the roots of trees cannot easily penetrate it. Since grasses send their roots only into the more friable upper layers of soil, they possess another great advantage over the trees.

Far to the south of the prairies lie the grass-lands of tropical America, of which the llanos of the Orinoco furnish a good example. Almost everywhere their plumed grasses have been left to grow undisturbed by the plough, and even grazing animals are scarce. These extremely flat plains are flooded for months in the rainy season from May to October and are parched in the dry season that follows. As trees cannot endure such extremes, grasses are the prevailing growth. Elsewhere the nature of the soil causes many other grassy tracts to be scattered among the tropical jungle and forest. Trees are at a disadvantage both in porous, sandy soils, where the water drains away too rapidly, and in clayey soil, where it is held so long that the ground is saturated for weeks or months at a time. South of the tropical portion of South America the vast pampas of Argentina closely resemble the North American prairies and the drier plains to the west of them. Grain in the east and cattle in the west are fast causing the

disappearance of those great tussocks of tufted grasses eight or nine feet high which hold among grasses a position analogous to that of the Big Trees of California among trees of lower growth.

It is often said that America has no real deserts. This is true in the sense that there are no regions such as are found in Asia and Africa where one can travel a hundred miles at a stretch and scarcely see a sign of vegetation — nothing but barren gravel, graceful wavy sand dunes, hard wind-swept clay, or still harder rock salt broken into rough blocks with upturned edges. In the broader sense of the term, however, America has an abundance of deserts — regions which bear a thin cover of bushy vegetation but are too dry for agriculture without irrigation. On the north such deserts begin in southern Canada where a dry region abounding in small salt lakes lies at the eastern base of the Rocky Mountains. In the United States the deserts lie almost wholly between the Sierra Nevada and the Rocky Mountain ranges, which keep out any moisture that might come from either the west or the east. Beginning on the north with the sage-brush plateau of southern Washington, the desert expands to a width of seven hundred miles in the

gray, sage-covered basins of Nevada and Utah. In southern California and Arizona the sage-brush gives place to smaller forms like the salt-bush, and the desert assumes a sterner aspect. Next comes the cactus desert extending from Arizona far south into Mexico. One of the notable features of the desert is the extreme heat of certain portions. Close to the Nevada border in southern California, Death Valley, 250 feet below sea-level, is the hottest place in America. There alone among the American regions familiar to the writer does one have that feeling of intense, overpowering aridity which prevails so often in the deserts of Arabia and Central Asia. Some years ago a Weather Bureau thermometer was installed in Death Valley at Furnace Creek, where the only flowing water in more than a hundred miles supports a depressing little ranch. There one or two white men, helped by a few Indians, raise alfalfa, which they sell at exorbitant prices to deluded prospectors searching for riches which they never find. Though the terrible heat ruins the health of the white men in a year or two, so that they have to move away, they have succeeded in keeping a thermometer record for some years. No other properly exposed, out-of-door thermometer in the United States, or perhaps

in the world, is so familiar with a temperature of 100° F. or more. During the period of not quite fifteen hundred days from the spring of 1911 to May, 1915, a maximum temperature of 100° F. or more was reached on five hundred and forty-eight days, or more than one-third of the time. On July 10, 1913, the mercury rose to 134° F. and touched the top of the tube. How much higher it might have gone no one can tell. That day marks the limit of temperature yet reached in this country according to official records. In the summer of 1914 there was one night when the thermometer dropped only to 114° F., having been 128° F. at noon. The branches of a pepper-tree whose roots had been freshly watered wilted as a flower wilts when broken from the stalk.

East and south of Death Valley lies the most interesting section of the American desert, the so-called succulent desert of southern Arizona and northern Mexico. There in greatest profusion grow the cacti, perhaps the latest and most highly specialized of all the great families of plants. There occur such strange scenes as the "forests" of suhuaros, whose giant columns have already been described. Their beautiful crowns of large white flowers produce a fruit which is one of the

mainstays of the Papagos and other Indians of the regions. In this same region the yucca is highly developed, and its tall stalks of white or greenish flowers make the desert appear like a flower garden. In fact this whole desert, thanks to light rains in summer as well as winter, appears extraordinarily green and prosperous. Its fair appearance has deceived many a poor settler who has vainly tried to cultivate it.

Farther south the deserts of America are largely confined to plateaus like those of Mexico and Peru or to basins sheltered on all sides from rain-bearing winds. In such basins the suddenness of the transition from one type of vegetation to another is astonishing. In Guatemala, for instance, the coast is bordered by thick jungle which quickly gives place to magnificent rain forest a few miles inland. This continues two or three score miles from the coast until a point is reached where mountains begin to obstruct the rain-bearing trade-winds. At once the rain forest gives place to jungle; in a few miles jungle in its turn is replaced by scrub; and shortly the scrub degenerates to mere desert bush. Then in another fifty miles one rises to the main plateau passing once more through scrub. This time the scrub gives place to grass-lands

diversified by deciduous trees and pines which give the country a distinctly temperate aspect. On such plateaus the chief civilization of the tropical Latin-American countries now centers. In the past, however, the plateaus were far surpassed by the Maya lowlands of Yucatan and Guatemala.

We are wont to think of deserts as places where the plants are of few kinds and not much crowded. As a matter of fact, an ordinary desert supports a much greater variety of plants than does either a forest or a prairie. The reason is simple. Every desert contains wet spots near springs or in swamps. Such places abound with all sorts of water-loving plants. The deserts also contain a few valleys where the larger streams keep the ground moist at all seasons. In such places the variety of trees is as great as in many forests. Moreover almost all deserts have short periods of abundant moisture. At such times the seeds of all sorts of little annual plants, including grasses, daisies, lupines, and a host of others, sprout quickly, and give rise to a carpet of vegetation as varied and beautiful as that of the prairie. Thus the desert has not only its own peculiar bushes and succulents but many of the products of vegetation in swamps, grass-lands, and forests.

Though much of the ground is bare in the desert, the plants are actually crowded together as closely as possible. The showers of such regions are usually so brief that they merely wet the surface. At a depth of a foot or more the soil of many deserts never becomes moist from year's end to year's end. It is useless for plants to send their roots deep down under such circumstances, for they might not reach water for a hundred feet. Their only recourse is to spread horizontally. The farther they spread, the more water they can absorb after the scanty showers. Hence the plants of the desert throttle one another by extending their roots horizontally, just as those of the forest kill one another by springing rapidly upward and shutting out the light.

Vegetation, whether in forests, grass-lands, or deserts, is the primary source of human sustenance. Without it man would perish miserably; and where it is deficient, he cannot rise to great heights in the scale of civilization. Yet strangely enough the scantiness of the vegetation of the deserts was a great help in the ascent of man. Only in dry regions could primitive man compete with nature in fostering the right kind of vegetation. In such regions arose the nations which

first practised agriculture. There man became comparatively civilized while his contemporaries were still nomadic hunters in the grass-lands and the forests.

CHAPTER V

THE RED MAN IN AMERICA

When the white man first explored America, the parts of the continent that had made most progress were by no means those that are most advanced today.[1] None of the inhabitants, to be sure, had risen above barbarism. Yet certain nations or tribes had advanced much higher than others. There was a great contrast, for example, between the well-organized barbarians of Peru and the almost completely unorganized Athapascan savages near Hudson Bay.

In the northern continent aboriginal America reached its highest development in three typical

[1] In the present chapter most of the facts as to the Indians north of Mexico are taken from the admirable *Handbook of American Indians North of Mexico*, edited by F. W. Hodge, Smithsonian Institution, Bureau of Ethnology, Bulletin 30, Washington, 1907, two volumes. In summing up the character and achievements of the Indians I have drawn also on other sources, but have everywhere taken pains to make no statements which are not abundantly supported by this authoritative publication. In some cases I have not hesitated to paraphrase considerable portions of its articles.

environments. The first of these regions centered in the valley of Mexico where dwelt the Aztecs, but it extended as far north as the Pueblos in Arizona and New Mexico. The special feature of the environment was the relatively dry, warm climate with the chief rainfall in summer. The Indians living in this environment were notable for their comparatively high social organization and for religious ceremonials whose elaborateness has rarely been surpassed. On the whole, the people of this summer rain or Mexican type were not warlike and offered little resistance to European conquest. Some tribes, to be sure, fought fiercely at first, but yielded within a few years; the rest submitted to the lordly Spaniards almost without a murmur. Their civilization, if such we may call it, had long ago seen its best days. The period of energy and progress had passed, and a time of inertia and decay had set in.

A century after the Spaniards had overcome the aborigines of Mexico, other Europeans — French, English, and Dutch — came into contact with a sturdier type of red man, best represented by the Iroquois or Five Nations of central New York. This more active type dwelt in a physical environment notable for two features — the abundance of

cyclonic storms bringing rain or snow at all seasons and the deciduous forest which thickly covered the whole region. Unlike the Mexican, the civilization of the Iroquois was young, vigorous, and growing. It had not learned to express itself in durable architectural forms like those of Mexico, nor could it rival the older type in social and religious organization. In political organization, however, the Five Nations had surpassed the other aboriginal peoples of North America. When the white man became acquainted with the Iroquois in the seventeenth century, he found five of their tribes organized into a remarkable confederation whose avowed object was to abolish war among themselves and to secure to all the members the peaceful exercise of their rights and privileges. So well was the confederation organized that, in spite of war with its enemies, it persisted for at least two hundred years.

One of the chief characteristics of the Iroquois was their tremendous energy. They were so energetic that they pursued their enemies with an implacable relentlessness similar to the restless eagerness with which the people of the region from New York to Chicago now pursue their business enterprises. This led the Iroquois to torture their

prisoners with the utmost ingenuity and cruelty. Not only did the savages burn and mutilate their captives, but they sometimes added the last refinement of torture by compelling the suffering wretches to eat pieces of flesh cut from their own bodies. Energy may lead to high civilization, but it may also lead to excesses of evil.

The third prominent aboriginal type was that of the fishermen of the coast of British Columbia, especially the Haidas of the Queen Charlotte Islands. The most important features of their environment were the submerged coast with its easy navigation, the mild oceanic climate, and the dense pine forests. The Haidas, like the Iroquois, appear to have been a people who were still advancing. Such as it was, their greatness was apparently the product of their own ingenuity and not, like that of the Mexicans, an inheritance from a greater past. The Haidas lacked the relentless energy of the Iroquois and shared the comparatively gentle character which prevailed among all the Indians along the Pacific Coast. They were by no means weaklings, however. Commercially, for instance, they seem to have been more advanced than any North American tribe except those in the Mexican area. In architecture they stood equally

high. We are prone to think of the Mexicans as the best architects among the aborigines, but when the white man came even the Aztecs were merely imitating the work of their predecessors. The Haidas, on the contrary, were showing real originality. They had no stone with which to build, for their country is so densely forested that stone is rarely visible. They were remarkably skillful, however, in hewing great beams from the forest. With these they constructed houses whose carved totem poles and graceful façades gave promise of an architecture of great beauty. Taking into account the difficulties presented by a material which was not durable and by tools which were nothing but bits of stone, we must regard their totem poles and mural decorations as real contributions to primitive architecture.

In addition to these three highest types of the red man there were many others. Each, as we shall see, owed its peculiarities largely to the physical surroundings in which it lived. Of course different tribes possessed different degrees of innate ability, but the chief differences in their habits and mode of life arose from the topography, the climate, the plants, and the animals which formed the geographical setting of their homes.

In previous chapters we have gained some idea of the topography of the New World and of the climate in its relation to plants and animals. We have also seen that climate has much to do with human energy. We have not, however, gained a sufficiently clear idea of the distribution of climatic energy. A map of the world showing how energy would be distributed if it depended entirely upon climate clarifies the subject. The dark shading of the map indicates those regions where energy is highest. It is based upon measurements of the strength of scores of individuals, upon the scholastic records of hundreds of college students, upon the piecework of thousands of factory operatives, and upon millions of deaths and births in a score of different countries. It takes account of three chief climatic conditions — temperature, humidity, and variability. It also takes account of mental as well as physical ability. Underneath it is a map of the distribution of civilization on the basis of the opinion of fifty authorities in fifteen different countries. The similarity of the two maps is so striking that there can be little question that today the distribution of civilization agrees closely with the distribution of climatic energy. When Egypt, Babylonia, Greece, and Rome were at the height of

their power this agreement was presumably the same, for the storm belt which now gives variability and hence energy to the thickly shaded regions in our two maps then apparently lay farther south.

It is generally considered that no race has been more closely dependent upon physical environment than were the Indians. Why, then, did the energizing effect of climate apparently have less effect upon them than upon the other great races? Why were not the most advanced Indian tribes found in the same places where white civilization is today most advanced? Climatic changes might in part account for the difference, but, although such changes apparently took place on a large scale in earlier times, there is no evidence of anything except minor fluctuations since the days of the first white settlements. Racial inheritance likewise may account for some of the differences among the various tribes, but it was probably not the chief factor. That factor was apparently the condition of agriculture among people who had neither iron tools nor beasts of burden. Civilization has never made much progress except when there has been a permanent cultivation of the ground. It has been said that "the history of agriculture is the history of man in his most primi-

tive and most permanent aspect." If we examine the achievements and manner of life of the Indians in relation to the effect of climate upon agriculture and human energy, as well as in relation to the more obvious features of topography and vegetation, we shall understand why the people of aboriginal America in one part of the continent differed so greatly from those in another part.

In the far north the state of the inhabitants today is scarcely different from what it was in the days of Columbus. Then, as now, the Eskimos had practically no political or social organization beyond the family or the little group of relatives who lived in a single camp. They had no permanent villages, but moved from place to place according to the season in search of fish, game, and birds. They lived this simple life not because they lacked ability but because of their surroundings. Their kayaks or canoes are marvels of ingenuity. With no materials except bones, driftwood, and skins they made boats which fulfilled their purpose with extraordinary perfection. Seated in the small, round hole which is the only opening in the deck of his canoe, the Eskimo hunter ties his skin jacket tightly outside the circular gunwale and is thus shut into a practically water-tight compartment.

Though the waves dash over him, scarcely a drop enters the craft as he skims along with his double paddle among cakes of floating ice. So, too, the snowhouse with its anterooms and curved entrance passage is as clever an adaptation to the needs of wanderers in a land of ice and snow as is the sky-scraper to the needs of a busy commercial people crowded into great cities. The fact that the oil-burning, soapstone lamps of the Eskimo were the only means of producing artificial light in aboriginal America, except by ordinary fires, is another tribute to the ingenuity of these northerners. So, too, is the fire-drill by which they alone devised a means of increasing the speed with which one stick could be twirled against another to produce fire. In view of these clever inventions it seems safe to say that the Eskimo has remained a nomadic savage not because he lacks inventive skill but partly because the climate deadens his energies and still more because it forbids him to practice agriculture.

Southward and inland from the coastal homes of the Eskimo lies the great region of the northern pine forests. It extends from the interior of Alaska southeastward in such a way as to include most of the Canadian Rockies, the northern plains from

Great Bear Lake almost to Lake Winnipeg, and most of the great Laurentian shield around Hudson Bay and in the peninsula of Labrador. Except among the inhabitants of the narrow Pacific slope and those of the shores of Labrador and the St. Lawrence Valley, a single type of barbarism prevailed among the Indians of all the vast pine forest area. Only in a small section of the wheat-raising plains of Alberta and Saskatchewan have their habits greatly changed because of the arrival of the white man. Now as always the Indians in these northern regions are held back by the long, benumbing winters. They cannot practice agriculture, for no crops will grow. They cannot depend to any great extent upon natural vegetation, for aside from blueberries, a few lichens, and one or two other equally insignificant products, the forests furnish no food except animals. These lowly people seem to have been so occupied with the severe struggle with the elements that they could not even advance out of savagery into barbarism. They were homeless nomads whose movements were determined largely by the food supply.

Among the Athapascans who occupied all the western part of the northern pine forests, clothing was made of deerskins with the hair left on. The

lodges were likewise of deer or caribou skins, although farther south these were sometimes replaced by bark. The food of these tribes consisted of caribou, deer, moose, and musk-ox together with smaller animals such as the beaver and hare. They also ate various kinds of birds and the fish found in the numerous lakes and rivers. They killed deer by driving them into an angle formed by two converging rows of stakes, where they were shot by hunters lying in wait. Among the Kawchodinne tribe near Great Bear Lake hares were the chief source of both food and clothing. When an unusually severe winter or some other disaster diminished the supply, the Indians believed that the animals had mounted to the sky by means of the trees and would return by the same way. In 1841 owing to scarcity of hares many of this tribe died of starvation, and numerous acts of cannibalism are said to have occurred. Small wonder that civilization was low and that infanticide, especially of female children, was common. Among such people women were naturally treated with a minimum of respect. Since they were not skilled as hunters, there was relatively little which they could contribute toward the sustenance of the family. Hence they were held in low esteem, for

among most primitive people woman is valued largely in proportion to her economic contribution. Her low position is illustrated by the peculiar funeral custom of the Takulli, an Athapascan tribe on the Upper Frazer River. A widow was obliged to remain upon the funeral pyre of her husband till the flames reached her own body. When the fire had died down she collected the ashes of her dead and placed them in a basket, which she was obliged to carry with her during three years of servitude in the family of her husband. At the end of that time a feast was held, when she was released from thraldom and permitted to remarry if she desired.

Poor and degraded as the people of the northern forests may have been, they had their good traits. The Kutchins of the Yukon and Lower Mackenzie regions, though they killed their female children, were exceedingly hospitable and kept guests for months. Each head of a family took his turn in feasting the whole band. On such occasions etiquette required the host to fast until the guests had departed. At such feasts an interesting wrestling game was played. First the smallest boys began to wrestle. The victors wrestled with those next in strength and so on until finally the strongest and freshest man in the band remained the final

victor. Then the girls and women went through the same progressive contest. It is hard to determine whether the people of the northern pine forest were more or less competent than their Eskimo neighbors. It perhaps makes little difference, for it is doubtful whether even a race with brilliant natural endowments could rise far in the scale of civilization under conditions so highly adverse.

The Eskimos of the northern coasts and the people of the pine forests were not the only aborigines whose development was greatly retarded because they could not practice agriculture. All the people of the Pacific coast from Alaska to Lower California were in similar circumstances. Nevertheless those living along the northern part of this coast rose to a much higher level than did those of California. This has sometimes been supposed to show that geographical environment has little influence upon civilization, but in reality it proves exactly the opposite.

The coast of British Columbia was one of the three chief centers of aboriginal America. As *The Encyclopædia Britannica*[1] puts it: "The Haida people constituted with little doubt the finest race

[1] 11th Edition, vol. XXII, p. 730.

and that most advanced in the arts of the entire west coast of North America." They and their almost equally advanced Tlingit and Tsimshian neighbors on the mainland displayed much mechanical skill, especially in canoe-building, wood-carving, and the working of stone and copper, as well as in making blankets and baskets. To this day they earn a considerable amount of money by selling their carved objects of wood and slate to traders and tourists. Their canoes were hollowed out of logs of cedar and were often very large. Houses which were sometimes 40 by 100 feet were built of huge cedar beams and planks, which were first worked with stone and were then put together at great feasts. These correspond to the "raising bees" at which the neighbors gathered to erect the frames of houses in early New England. Each Haida house ordinarily had a single carved totem pole in the middle of the gable end which faced toward the beach. Often the end posts in front were also carved and the whole house was painted. Another evidence of the fairly advanced state of the Haidas was their active commercial intercourse with regions hundreds of miles away. At their "potlatches," as the raising bees were called by the whites, traffic went on vigorously.

Carved copper plates were among the articles which they esteemed of highest value. Standing in the tribe depended on the possession of property rather than on ability in war, in which respect the Haidas were more like the people of today than were any of the other Indian tribes.

Slavery was common among the Haidas. Even as late as 1861, 7800 Tlingits held 828 slaves. Slavery may not be a good institution in itself, but it indicates that people are well-to-do, that they dwell in permanent abodes, and that they have a well-established social order. Among the more backward Iroquois, captives rarely became genuine slaves, for the social and economic organization was not sufficiently developed to admit of this. The few captives who were retained after a fight were adopted into the tribe of the captors or else were allowed to live with them and shift for themselves — a practice very different from that of the Haidas.

Another feature of the Haidas' life which showed comparative progress was the social distinctions which existed among them. One of the ways in which individuals maintained their social position was by giving away quantities of goods of all kinds at the potlatches which they organized. A man

sometimes went so far as to strip himself of nearly every possession except his house. In return for this, however, he obtained what seemed to him an abundant reward in the respect with which his fellow-tribesmen afterward regarded him. At subsequent potlatches he received in his turn a measure of their goods in proportion to his own gifts, so that he was sometimes richer than before. These potlatches were social as well as industrial functions, and dancing and singing were interspersed with the feasting. One of the amusements was a musical contest in which singers from one tribe or band would contend with one another as to which could remember the greatest number of songs or accurately repeat a new song after hearing it for the first time. At the potlatches the children of chiefs were initiated into secret societies. They had their noses, ears, and lips pierced for ornaments, and some of them were tattooed. This great respect for social position which the Haidas manifested is doubtless far from ideal, but it at least indicates that a part of the tribe was sufficiently advanced to accumulate property and to pass it on to its descendants — a custom that is almost impossible among tribes which move from place to place.

The question suggests itself why these coast barbarians were so much in advance of their neighbors a few hundred miles away in the pine woods of the mountains. The climate was probably one reason for this superiority. Instead of being in a region like the center of the pine forests of British Columbia where human energy is sapped by six or eight months of winter, the Haidas enjoyed conditions like those of Scotland. Although snow fell occasionally, severe cold was unknown. Nor was there great heat in summer. The Haidas dwelt where both bodily strength and mental activity were stimulated. In addition to this advantage of a favorable climate these Indians had a large and steady supply of food close at hand. Most of their sustenance was obtained from the sea and from the rivers, in which the runs of salmon furnished abundant provisions, which rarely failed. In Hecate Strait, between the Queen Charlotte Islands and the mainland, there were wonderfully productive halibut fisheries, from which a supply of fish was dried and packed away for the winter, so that there was always a store of provisions on hand. The forests in their turn furnished berries and seeds, as well as bears, mountain goats, and other game.

Moreover the people of the northwest coast had the advantage of not being forced to move from place to place in order to follow the fish. They lived on a drowned shore where bays, straits, and sounds are extraordinarily numerous. The great waves of the Pacific are shut out by the islands so that the waterways are almost always safe for canoes. Instead of moving their dwellings in order to follow the food supply, as the Eskimo and the people of the pine forest were forced to do, the Haidas and their neighbors were able without difficulty to bring their food home. At all seasons the canoes made it easy to transport large supplies of fish from places even a hundred miles away. Having settled dwellings, the Haidas could accumulate property and acquire that feeling of permanence which is one of the most important conditions for the development of civilization. Doubtless the Haidas were intellectually superior to many other tribes, but even if they had not been greatly superior, their surroundings would probably have made them stand relatively high in the scale of civilization.

Southward from the Haidas, around Puget Sound and in Washington and Oregon, there was a gradual decline in civilization. The Chinook

Indians of the lower Columbia, beyond the limits of the great northern archipelago, had large communal houses occupied by three or four families of twenty or more individuals. Their villages were thus fairly permanent, although there was much moving about in summer owing to the nature of the food supply, which consisted chiefly of salmon, with roots and berries indigenous to the region. The people were noted as traders not only among themselves but with surrounding tribes. They were extremely skillful in handling their canoes, which were well made, hollowed out of single logs, and often of great size. In disposition they are described as treacherous and deceitful, especially when their cupidity was aroused. Slaves were common and were usually obtained by barter from surrounding tribes, though occasionally by successful raids. These Indians of Oregon by no means rivaled the Haidas, for their food supply was less certain and they did not have the advantage of easy water communication, which did so much to raise the Haidas to a high level of development.

Of the tribes farther south an observer says: "In general rudeness of culture the California Indians are scarcely above the Eskimo, and whereas the lack of development of the Eskimo on many

sides of their nature is reasonably attributable in part to their difficult and limiting environment, the Indians of California inhabit a country naturally as favorable, it would seem, as it might be. If the degree of civilization attained by a people depends in any large measure on their habitat, as does not seem likely, it might be concluded from the case of the California Indians that natural advantages were an impediment rather than an incentive to progress." In some of the tribes, such as the Hupa, for example, there existed no organization and no formalities in the government of the village. Formal councils were unknown, although the chief might and often did ask advice of his men in a collected body. In general the social structure of the California Indians was so simple and loose that it is hardly correct to speak of their tribes. Whatever solidarity there was among these people was due in part to family ties and in part to the fact that they lived in the same village and spoke the same dialect. Between different groups of these Indians, the common bond was similarity of language as well as frequency and cordiality of intercourse. In so primitive a condition of society there was neither necessity nor opportunity for differences of rank. The influence

of chiefs was small and no distinct classes of slaves were known.

Extreme poverty was the chief cause of the low social and political organization of these Indians. The Maidus in the Sacramento Valley were so poor that, in addition to consuming every possible vegetable product, they not only devoured all birds except the buzzard, but ate badgers, skunks, wildcats, and mountain lions, and even consumed salmon bones and deer vertebræ. They gathered grasshoppers and locusts by digging large shallow pits in a meadow or flat. Then, setting fire to the grass on all sides, they drove the insects into the pit. Their wings being burned off by the flames, the grasshoppers were helpless and were thus collected by the bushel. Again of the Moquelumne, one of the largest tribes in central California, it is said that their houses were simply frameworks of poles and brush which in winter were covered with earth. In summer they erected cone-shaped lodges of poles among the mountains. In favorable years they gathered large quantities of acorns, which formed their principal food, and stored them for winter use in granaries raised above the ground. Often, however, the crop was poor, and the Indians were left on the verge of starvation.

Finally in the far south, in the peninsula of Lower California, the tribes were "probably the lowest in culture of any Indians in North America, for their inhospitable environment which made them wanderers, was unfavorable to the foundation of government even of the rude and unstable kind found elsewhere." The Yuman tribes of the mountains east of Santiago wore sandals of maguey fiber and descended from their own territory among the mountains "to eat calabash and other fruits" that grew beside the Colorado River. They were described as "very dirty on account of the much mescal they eat." Others speak of them as "very filthy in their habits. To overcome vermin they coat their heads with mud with which they also paint their bodies. On a hot day it is by no means unusual to see them wallowing in the mud like pigs." They were "exceedingly poor, having no animals except foxes of which they had a few skins. The dress of the women in summer was a shirt and a bark skirt. The men appear to have been practically unclothed during this season. The practice of selling children seems to have been common. Their sustenance was fish, fruits, vegetables, and seeds of grass, and many of the tribes were said to have been dreadfully scorbutic."

A little to the east of these degraded savages the much more advanced Mohave tribe had its home on the lower Colorado River. The contrast between these neighboring tribes throws much light on the reason for the low estate of the California Indians. "No better example of the power of environment to better man's condition can be found than that shown as the lower Colorado is reached. Here are tribes of the same family (as those of Lower California) remarkable not only for their fine physical development, but living in settled villages with well-defined tribal lines, practising a rude, but effective, agriculture, and well advanced in many primitive Indian arts. The usual Indian staples were raised except tobacco, these tribes preferring a wild tobacco of their region to the cultivated."[1]

This quotation is highly significant. With it should be compared the fact that there is no evidence that corn or anything else was cultivated in California west of the Rio Colorado Valley. California is a region famous throughout America for its agriculture, but its crops are European in origin. Even in the case of fruits, such as the grape, which have American counterparts, the varieties actually

[1] Hodge, *Handbook of American Indians.*

cultivated were brought from Europe. Wheat and barley, the chief foodstuffs for which California and similar subtropical regions are noted, were unknown in the New World before the coming of the white man. In pre-Columbian America corn was the only cultivated cereal. The other great staples of early American agriculture were beans and pumpkins. All three are preëminently summer crops and need much water in July and August. In California there is no rain at this season. Though the fall rains, which begin to be abundant in October and November, do not aid these summer crops, they favor wheat and barley. The winter rains and the comparatively warm winter weather permit these grains to grow slowly but continuously. When the warm spring arrives, there is still enough rain to permit wheat and barley to make a rapid growth and to mature their seeds long before the long, dry summer begins. The comparatively dry weather of May and June is just what these cereals need to ripen the crop, but it is fatal to any kind of agriculture which depends on summer rain.

Crops can of course be grown during the summer in California by means of irrigation, but this is rarely a simple process. If irrigation is to be

effective in California, it cannot depend on the small streams which practically dry up during the long, rainless summer, but it must depend on comparatively large streams which flow in well-defined channels. With our modern knowledge and machinery it is easy for us to make canals and ditches and to prepare the level fields needed to utilize this water. A people with no knowledge of agriculture, however, and with no iron tools cannot suddenly begin to practice a complex and highly developed system of agriculture. In California there is little or none of the natural summer irrigation which, in certain parts of America, appears to have been the most important factor leading to the first steps in tilling the ground. The lower Colorado, however, floods broad areas every summer. Here, as on the Nile, the retiring floods leave the land so moist that crops can easily be raised. Hence the Mohave Indians were able to practice agriculture and to rise well above their kinsmen not only in Lower California but throughout the whole State.

In the Rocky Mountain region of the United States, just as on the Pacific coast, the condition of the tribes deteriorated more and more the farther they lived to the south. In the regions where

the rainfall comes in summer, however, and hence favors primitive agriculture, there was a marked improvement. The Kutenai tribes lived near the corner where Idaho, Montana, and British Columbia now meet. They appear to have been of rather high grade, noteworthy for their morality, kindness, and hospitality. More than any other Indians of the Rocky Mountain region, they avoided drunkenness and lewd intercourse with the whites. Their mental ability was comparatively high, as appears from their skill in buffalo-hunting, in making dugouts and bark canoes, and in constructing sweat-houses and lodges of both skins and rushes. Even today the lower Kutenai are noted for their water-tight baskets of split roots. Moreover the degree to which they used the plants that grew about them for food, medicine, and economical purposes was noteworthy. They also had an esthetic appreciation of several plants and flowers — a gift rare among Indians. These people lived in the zone of most stimulating climate and, although they did not practice agriculture and had little else in their surroundings to help them to rise above the common level, they dwelt in a region where there was rain enough in summer to prevent their being on the verge of starvation, as

the Indians of California usually were. Moreover they were near enough to the haunts of the buffalo to depend on that great beast for food. Since one buffalo supplies as much food as a hundred rabbits, these Indians were vastly better off than the people of the drier parts of the western coast.

South of the home of the Kutenai, in eastern Oregon, southern Idaho, Nevada, Utah, and neighboring regions dwelt the Utes and other Shoshoni tribes. In this region the rainfall, which is no greater than that of California, occurs chiefly in winter. The long summer is so dry that, except by highly developed methods of irrigation, agriculture is impossible. Hence it is not surprising to find a traveler in 1850 describing one tribe of the Ute family as "without exception the most miserable looking set of human beings I ever saw. They have hitherto subsisted principally on snakes, lizards, roots." The lowest of all the Ute tribes were those who lived in the sage-brush. The early explorer, Bonneville, found the tribes of Snake River wintering in brush shelters without roofs — merely heaps of brush piled high, behind which the Indians crouched for protection from wind and snow. Crude as such shelters may seem, they were

the best that could be constructed by people who dwelt where there was no vegetation except little bushes, and where the soil was for the most part sandy or so salty that it could not easily be made into adobe bricks.

The food of these Utes and Shoshonis was no better than their shelters. There were no large animals for them to hunt; rabbits were the best that they could find. Farther to the east, where the buffalo wandered during part of the year and where there are some forests, the food was better, the shelters were more effective, and, in general, the standard of living was higher, although racially the two groups of people were alike. In this case, as in others, the people whose condition was lowest were apparently as competent as those whose material conditions were much better. Today, although the Ute Indians, like most of their race, are rather slow, some tribes, such as the Payutes, are described as not only "peaceful and moral," but also "industrious." They are highly commended for their good qualities by those who have had the best opportunities for judging. While not as bright in intellect as some of the prairie tribes whom we shall soon consider, they appear to possess more solidity of character. By their

willingness and efficiency as workers they have made themselves necessary to the white farmers and have thus supplied themselves with good clothing and many of the comforts of life. They have resisted, too, many of the evils coming from the advance of civilization, so that one agent speaks of these Indians as presenting the singular anomaly of improving by contact with the whites. Apparently their extremely low condition in former times was due merely to that same handicap of environment which kept back the Indians of California.

Compare these backward but not wholly ungifted Utes with the Hopi who belonged to the same stock. The relatively high social organization of the latter people and the intricacy and significance of their religious ceremonials are well known. Mentally the Hopi seem to be the equal of any tribe, but it is doubtful whether they have much more innate capacity than many of their more backward neighbors. Nevertheless they made much more progress before the days of the white man, as can easily be seen in their artistic development. Every one who has crossed the continent by the Santa Fé route knows how interesting and beautiful are their pottery, basketry,

and weaving. Not only in art but also in government the Hopi are highly advanced. Their governing body is a council of hereditary elders together with the chiefs of religious fraternities. Among these officials there is a speaker chief and a war chief, but there seems never to have been any supreme chief of all the Hopi. Each pueblo has an hereditary chief who directs all the communal work, such as the cleaning of the springs and the general care of the village. Crimes are rare. This at first sight seems strange in view of the fact that no penalty was inflicted for any crime except sorcery, but under Hopi law all transgressions could be reduced to sorcery. One of the most striking features of Hopi life was its rich religious development. The Hopi recognized a large number of supernatural beings and had a great store of most interesting and poetic mythological tales. The home of the Hopi would seem at first sight as unfavorable to progress as that of their Ute cousins, but the Hopi have the advantage of being the most northwesterly representatives of the Indians who dwell within the regions of summer rain. Fortunately for them, their country is too desert and unforested for them to subsist to any great degree by the chase. They are thus forced to devote all

their energy to agriculture, through which they have developed a relatively high standard of living. They dwell far enough south to have their heaviest rainfall in summer and not in winter, as is the case in Utah, so that they are able to cultivate crops of corn and beans. Where such an intensive system of agriculture prevails, the work of women is as valuable as that of men. The position of woman is thus relatively high among the Hopi, for she is useful not only for her assistance in the labors of the field but also for her skill in preserving the crops, grinding the flour, and otherwise preparing the comparatively varied food which this tribe fortunately possesses.

From northern New Mexico and Arizona to Mexico City summer rains, dry winters, and still drier springs, are the rule. Forests are few, and much of the country is desert. The more abundant the rains, the greater the number of people and the greater the opportunities for the accumulation of wealth, and thus for that leisure which is necessary to part of a community if civilization is to make progress. That is one reason why the civilization of the summer rain people becomes more highly developed as they go from north to south. The fact that the altitude of the country increases

from the United States border southward also tends in the same direction, for it causes the climate to be cooler and more bracing at Mexico City than at places farther north.

The importance of summer rains in stimulating growth and in facilitating the early stages of agriculture is noteworthy. Every one familiar with Arizona and New Mexico knows how the sudden summer showers fill the mountain valleys with floods which flow down upon the plain and rapidly spread out into broad, thin sheets, often known as *playas*. There the water stands a short time and then either sinks into the ground or evaporates. Such places are favored with the best kind of natural irrigation, and after the first shower it is an easy matter for the primitive farmer to go out and drop grains of corn into holes punched with a stick. Thereafter he can count on other showers to water his field while the corn sprouts and grows to maturity. All that he needs to do is to watch the field to protect it from the rare depredations of wild animals. As time goes on the primitive farmer realizes the advantage of leading the water to particularly favorable spots and thus begins to develop a system of artificial irrigation. In regions where such advantageous conditions

prevail, the people who live permanently in one place succeed best, for the work that they do one year helps them the next. They are not greatly troubled by weeds, for, though grasses grow as well as corn in the places where the water spreads out, the grasses take the form of little clumps which can easily be pulled up. In the drier parts of the area of summer rain, it becomes necessary to conserve the water supply to the utmost. The Hopi consider sandy fields the best, for the loose sand on top acts as a natural blanket to prevent evaporation from the underlying layers. Sometimes in dry seasons the Hopi use extraordinary methods to help their seeds to sprout. For instance, they place a seed in a ball of saturated mud which they bury beneath several inches of sand. As the sand prevents evaporation, practically all the water is retained for the use of the seed, which thereupon sprouts and grows some inches by the time the first summer floods arrive.

The Indians of the Great Plains lived a very different life from that of the natives of either the mountains or the Pacific coast. In the far north, to be sure, the rigorous climate caused all the Indians to live practically alike, whether in the Rockies, the plains, or the Laurentian highland.

South of them, in that great central expanse stretching from the latitude of Lake Winnipeg to the Rio Grande River, the Indians of the plains possessed a relatively uniform type of life peculiar to themselves. This individuality was due partly to the luxuriant carpet of grass which covered the plains and partly to the supply of animal food afforded by the vast herds of buffaloes which roamed in tens of thousands throughout the whole territory. The grass was important chiefly because it prevented the Indians from engaging in agriculture, for it must never be forgotten that the Indians had neither iron tools nor beasts of burden to aid them in overcoming the natural difficulties in the way of agriculture. To be sure, they did occasionally pound meteoric iron into useful implements, but this substance was so rare that probably not one Indian in a hundred had ever seen a piece. The Indians were quite familiar with copper, but there is not the slightest evidence that they had discovered any means of hardening it. Metals played no real part in the life of any of the Indians of America, and without such tools as iron spades and hoes it was impossible for them to cultivate grassland. If they burned the prairie and dropped seeds into holes, the corn or beans which they thus

planted were sure to be choked by the quickly springing grass. To dig away the tough sod around the hole for each seed would require an almost incredible amount of work even with iron tools. To accomplish this with wooden spades, rude hoes made of large flakes of flint, or the shoulder blades of the buffalo, was impossible on any large scale. Now and then in some river bottom where the grass grew in clumps and could be easily pulled up, a little agriculture was possible. That is all that seems to have been attempted on the great grassy plains.

The Indians could not undertake any widespread cultivation of the plains not only because they lacked iron tools but also because they had no draft animals. The buffalo was too big, too fierce, and too stupid to be domesticated. In all the length and breadth of the two Americas there was no animal to take the place of the useful horse, donkey, or ox. The llama was too small to do anything but carry light loads, and it could live only in a most limited area among the cold Andean highlands. Even if the aboriginal Americans could have made iron ploughs, they could not have ploughed the tough sod without the aid of animals. Moreover, even if the possession of

metal tools and beasts of burden had made agriculture possible in the grass-lands, it would have been difficult, in the absence of wood for fences, to prevent the buffalo from eating up the crops or at least from tramping through them and spoiling them. Thus the fertile land of the great plains remained largely unused until the white man came to the New World bringing the iron tools and domestic animals that were necessary to successful agriculture.

Although farming of any sort was almost as impossible in the plains as in the dry regions of winter rains farther west, the abundance of buffaloes made life much easier in many respects. It is astonishing to see how many purposes these animals served. An early traveler who dwelt among one of the buffalo-hunting tribes, the Tonkawa of central Texas, says: "Besides their meat it [the buffalo] furnishes them liberally what they desire for conveniences. The brains are used to soften skins, the horns for spoons and drinking cups, the shoulder blades to dig up and clear off the ground, the tendons for threads and bow strings, the hoofs to glue the arrow-feathering. From the tail-hair they make ropes and girths, from the wool, belts and various

ornaments. The hide furnishes . . . shields, tents, shirts, footwear, and blankets to protect them from the cold."[1]

The buffalo is a surprisingly stupid animal. When a herd is feeding it is possible for a man to walk into the midst of it and shoot down an animal. Even when one of their companions falls dead, the buffaloes pay no attention to the hunter provided he remains perfectly still. The wounded animals are not at first dangerous but seek to flee. Only when pursued and brought to bay do they turn on their pursuers. When the Indians of an encampment united their forces, as was their regular habit, they were able to slaughter hundreds of animals in a few days. The more delicate parts of the meat they ate first, often without cooking them. The rest they dried and packed away for future use, while they prepared the hides as coverings for the tents or as rugs in which to sleep.

Wherever the buffaloes were present in large numbers, the habits of the Indians were much the same. They could not live in settled villages, for there was no assurance that the buffalo would come to any particular place each year. The plains tribes were therefore more thoroughly nomadic than al-

[1] See Hodge, *Handbook of American Indians*, vol. II, p. 781.

most any others, especially after the introduction of horses. Because they wandered so much, they came into contact with other tribes to an unusual degree, and much of the contact was friendly. Gradually the Indians developed a sign language by which tribes of different tongues could communicate with one another. At first these signs were like pictographs, for the speaker pointed as nearly as possible to the thing that he desired to indicate, but later they became more and more conventional. For example, man, the erect animal, was indicated by throwing up the hand, with its back outward and the index finger extending upward. Woman was indicated by a sweeping downward movement of the hand at the side of the head with fingers extended to denote long hair or the combing of flowing locks.

Among the plains Indians, the Dakotas, the main tribe of the Sioux family, are universally considered to have stood highest not only physically but mentally, and probably morally. Their bravery was never questioned, and they conquered or drove out every rival except the Chippewas. Their superiority was clearly seen in their system of government. Personal fitness and popularity determined chieftainship more than did

heredity. The authority of the chief was limited by the Band Council, without whose approbation little or nothing could be accomplished. In one of the Dakota tribes, the Tetons, the policing of a village was confided to two or three officers who were appointed by the chief and who remained in power until their successors were appointed. Day and night they were always on the watch, and so arduous were their labors that their term of service was necessarily short. The brevity of their term, however, was atoned for by the greatness of their authority, for in the suppression of disturbances no resistance was suffered. Their persons were sacred, and if in the execution of their duty they struck even a chief of the second class they could not be punished.

The Dakotas, who lived in the region where their name is still preserved, inhabited that part of the great plain which is climatically most favorable to great activity. It is perhaps because of their response to the influence of this factor of geographical environment that they and their neighbors are the best known of the plains tribes. Their activity in later times is evident from the fact that the Tetons were called "the plundering Arabs of America." If their activities had been more wisely

directed, they might have made a great name for themselves in Indian history. In the arts they stood as high as could be expected in view of the wandering life which they led and the limited materials with which they had to work. In the art of making pictographs, for instance, they excelled all other tribes, except perhaps the Kiowas, a plains tribe of Colorado and western Kansas. On the hides of buffalo, deer, and antelope which formed their tents, the Dakotas painted calendars, which had a picture for each year, or rather for each winter, while those of the Kiowas had a summer symbol and a winter symbol. Probably these calendars reveal the influence of the whites, but they at least show that these people of the plains were quick-witted.

Farther south the tribes of the plains stood on a much lower level than the Dakotas. The Spanish explorer, Cabeza de Vaca, describes the Yguases in Texas, among whom he lived for several years, in these words: "Their support is principally roots which require roasting two days. Many are very bitter. Occasionally they take deer and at times fish, but the quantity is so small and the famine so great that they eat spiders and eggs of ants, worms, lizards, salamanders, snakes, and

vipers that kill whom they strike, and they eat earth and all that there is, the dung of deer, things I omit to mention and I earnestly believe that were there stones in that land they would eat them. They save the bones of the fish they consume, the snakes and other animals, that they may afterward beat them together and eat the powder." During these painful periods, they bade Cabeza de Vaca "not to be sad. There would soon be prickly pears, although the season of this fruit of the cactus might be months distant. When the pears were ripe, the people feasted and danced and forgot their former privations. They destroyed their female infants to prevent them being taken by their enemies and thus becoming the means of increasing the latter's number."

East of the Great Plains there dwelt still another important type of Indians, the people of the deciduous forests. Their home extended from the Great Lakes to the Gulf of Mexico. As we have already seen, the Iroquois who inhabited the northern part of this region were in many respects the highest product of aboriginal America. The northern Iroquois tribes, especially those known as the Five Nations, were second to no other Indian people north of Mexico in political organization, state-

craft, and military prowess. Their leaders were genuine diplomats, as the wily French and English statesmen with whom they treated soon discovered. One of their most notable traits was the reverence which they had for the tribal law. The wars that they waged were primarily for political independence, for the fundamental principle of their confederation was that by uniting with one another they would secure the peace and welfare of all with whom they were connected by ties of blood. They prevented blood feuds by decreeing that there should be a price for the killing of a co-tribesman, and they abstained from eating the flesh of their enemies in order to avoid future strife. So thoroughly did they believe in the rights of the individual that women were accorded a high position. Among some of the tribes the consent of all the women who had borne children was required before any important measure could be taken. Candidates for a chiefship were nominated by the votes of the mothers, and, as lands and houses were the property of the women, their power in the tribe was great.

The Iroquois were sedentary and agricultural, and depended on the chase for only a small part of their existence. The northern tribes were

especially noted for their skill in building fortifications and houses. Their so-called castles were solid wooden structures with platforms running around the top on the inside. From the platforms stones and other missiles could be hurled down upon besiegers. According to our standards such dwellings were very primitive, but they were almost as great an advance upon the brush piles of the Utes as our skyscrapers are upon them.

Farther south in the Carolinas, the Cherokees, another Iroquoian tribe, stand out prominently by reason of their unusual mental ability. Under the influence of the white man, the Cherokees were the first to adopt a constitutional form of government embodied in a code of laws written in their own language. Their language was reduced to writing by means of an alphabet which one of their number named Sequoya had devised. Sequoya and other leaders, however, may not have been pure Indians, for by that time much white blood had been mixed with the tribe. Yet even before the coming of the white man the Cherokees were apparently more advanced in agriculture than the Iroquois were, but less advanced in their form of government, in their treatment of women, and in many other respects.

In general, as we go from north to south in the region of deciduous forests, we find that among the early Indians agriculture became more and more important and the people more sedentary, though not always more progressive in other ways. The Catawbas, for instance, in South Carolina were sedentary agriculturists and seem to have differed little in general customs from their neighbors. Their men were brave and honest but lacking in energy. In the Muskhogean family of Indians, comprising the Creeks, Choctaws, Chickasaws, and Seminoles, who occupied the Gulf States from Georgia to Mississippi, all the tribes were agricultural and sedentary and occupied villages of substantial houses. The towns near the tribal frontiers were usually palisaded, but those more remote from invasion were unprotected. All these Indians were brave but not warlike in the violent fashion of the Five Nations. The Choctaws would fight only in self-defense, it was said, but the Creeks and especially the Chickasaws were more aggressive. In their government these Muskhogean tribes appear to have attained a position corresponding to their somewhat advanced culture in other respects. Yet their confederacies were loose and flimsy compared with that of the Five Nations.

Another phase of the life of the tribes in the southern part of the region of deciduous forests is illustrated by the Natchez of Mississippi. These people were strictly sedentary and depended chiefly upon agriculture for a livelihood. They possessed considerable skill in the arts. For instance, they wove a cloth from the inner bark of the mulberry tree and made excellent pottery. They also constructed great mounds of earth upon which to erect their dwellings and temples. Like a good many of the other southern tribes, they fought when it was necessary, but they were peaceable compared with the Five Nations. They had a form of sun-worship resembling that of Mexico, and in other ways their ideas were like those of the people farther south. For instance, when a chief died, his wives were killed. In times of distress the parents frequently offered their children as sacrifice.

Many characteristics of the Natchez and other southern tribes seem to indicate that they had formerly possessed a civilization higher than that which prevailed when the white man came. The Five Nations, on the contrary, apparently represent an energetic people who were on the upward path and who might have achieved great things if

the whites had not interrupted them. The southern Indians resemble people whose best days were past, for the mounds which abound in the Gulf States appear to have been built chiefly in pre-Columbian days. Their objects of art, such as the remarkable wooden mortars found at Key Marco and the embossed copper plates found elsewhere in Florida, point to a highly developed artistic sense which was no longer in evidence at the coming of the white man.

It is interesting to see the way in which climatic energy tended to give the Five Nations a marked superiority over the tribesmen of the South, while agriculture tended in the opposite direction. There has been much discussion as to the part played by agriculture among the primitive Americans, especially in the northeast. Corn, beans, and squashes were an important element in the diet of the Indians of the New England region, while farther south potatoes, sunflower seeds, and melons were also articles of food. The New England tribes knew enough about agriculture to use fish and shells for fertilizer. They had wooden mattocks and hoes made from the shoulder blades of deer, from tortoise shells, or from conch shells set in handles. They also had stone hoes and spades,

while the women used short pickers or parers about a foot long and five inches wide. Seated on the ground they used these to break the upper part of the soil and to grub out weeds, grass, and old corn-stalks. They had the regular custom of burning over an old patch each year and then replanting it. Sometimes they merely put the seeds in holes and sometimes they dug up and loosened the ground for each seed. Clearings they made by girdling the trees, that is, by cutting off the bark in a circle at the bottom and thus causing the tree to die. The brush they hacked or broke down and burned when it was dry enough.

There is much danger of confusing the agricultural condition of the Indian after the European had modified his life with his condition before the European came to America. For instance, in the excellent article on agriculture in the *Handbook of American Indians*, conditions prevailing as late as 1794 in the States south of the Great Lakes are spoken of as if typical of aboriginal America. But at that time the white man had long been in contact with the Indian, and iron tools had largely taken the place of stone. The rapidity with which European importations spread may be judged by the fact that as early as 1736 the Iroquois in

New York not only had obtained horses but were regularly breeding them. The use of the iron axe of course spread with vastly greater rapidity than that of the horse, for an axe or a knife was the first thing that an Indian sought from the white man. In the eighteenth century agriculture had thus become immeasurably easier than before, yet even then the Indians still kept up their old habit of cultivating the same fields only a short time. The regular practice was to cultivate a field five, ten, and sometimes even twenty or more years, and then abandon it.[1]

What hindered agriculture most in the northern part of the deciduous forest was the grass. Any one who has cultivated a garden knows how rapidly the weeds grow. He also knows that there is no weed so hard to exterminate as grass. When once it gets a foothold mere hoeing seems only to make

[1] Ordinarily it is stated that this practice was due to the exhaustion of the soil. That, however, is open to question, for five or ten years' desultory cultivation on the part of the Indian would scarcely exhaust the soil so much that people would go to the great labor of making new clearings and moving their villages. Moreover, in the Southern States it is well known today that the soil is exhausted much more rapidly than farther north because it contains less humus. Nevertheless the southern tribes cultivated the land about their villages for long periods. Tribes like the Creeks, the Cherokees, and the Natchez appear to have been decidedly less prone to move than the Iroquois, in spite of the relatively high development of these northern nations.

it grow the faster. The only way to get rid of grass when once it has become well established is to plow the field and start over again, but this the Indians could not do. When first a clearing was made in the midst of the forest, there was no grass to be contended with. Little by little, however, it was sure to come in, until at length what had been a garden was in a fair way to become a meadow. Then the Indians would decide that it was necessary to seek new fields.

One might suppose that under such circumstances the Indians would merely clear another patch of forest not far from the village and so continue to live in the old place. This, however, they did not do because the labor of making a clearing with stone axes and by the slow process of girdling and burning the trees was so great that it was possible only in certain favored spots where by accident the growth was less dense than usual. When once a clearing became grassy, the only thing to do was to hunt for a new site, prepare a clearing, and then move the village. This was apparently the reason why the Iroquois, although successful in other ways, failed to establish permanent towns like those of the Pueblos and the Haidas. Their advancement not only in architecture but in many

of the most important elements of civilization was for this reason greatly delayed. There was little to stimulate them to improve the land to which they were attached, for they knew that soon they would have to move.

Farther south the character of the grassy vegetation changes, and the condition of agriculture alters with it. The grass ceases to have that thick, close, turfy quality which we admire so much in the fields of the north, and it begins to grow in bunches. Often a southern hillside may appear from a distance to be as densely covered with grass as a New England hayfield. On closer examination, however, the growth is seen to consist of individual bunches which can easily be pulled up, so that among the southern tribes the fields did not become filled with grass as they did in the north, for the women had relatively little difficulty in keeping out this kind of weed as well as others.

In this survey of aboriginal America we have been impressed by the contrast between two diverse aspects of the control of human activities by physical environment. We saw, in the first place, that in our own day the distribution of culture in America is more closely related to climatic energy

than to any other factor, because man is now so advanced in the arts and crafts that agricultural difficulties do not impede him, except in the far north and in tropical forests.

Secondly, we have found that, although all the geographical factors acted upon the Indian as they do today, the absence of metals and beasts of burden compelled man to be nomadic, and hence to remain in a low stage of civilization in many places where he now can thrive.

In the days long before Columbus the distribution of civilization in the Red Man's Continent offered still a third aspect, strikingly different both from that of today and from that of the age of discovery. In that earlier period the great centers of civilization were south of their present situation. In the southern part of North America from Arizona to Florida there are abundant evidences that the Indians whom the white man found were less advanced than their predecessors. The abundant ruins of Arizona and New Mexico, their widespread distribution, and the highly artistic character of the pottery and other products of handicraft found in them seem to indicate that the ancient population was both denser and more highly cultured than that which the Europeans finally ousted. In the

Gulf States there is perhaps not much evidence that there was a denser population at an earlier period, but the excellence of the pre-Columbian handicrafts and the existence of a decadent sun worship illustrate the way in which the civilization of the past was higher than that of later days.

The Aztecs, who figure so largely in the history of the exploration and conquest of Mexico, were merely a warlike tribe which had been fortunate in the inheritance of a relatively high civilization from the past. So, too, the civilization found by the Spaniards at places such as Mitla, in the extreme south of Mexico, could not compare with that of which evidence is found in the ruins. Most remarkable of all is the condition of Yucatan and Guatemala. In northern Yucatan the Spaniards found a race of mild, decadent Mayas living among the relics of former grandeur. Although they used the old temples as shrines, they knew little of those who had built these temples and showed still less capacity to imitate the ancient architects. Farther south in the forested region of southern Yucatan and northern Guatemala the conditions are still more surprising, for today these regions are almost uninhabitable and are occupied by only a few sickly, degraded natives who live

largely by the chase. Yet in the past this region was the scene of by far the highest culture that ever developed in America. There alone in this great continent did men develop an architecture which, not only in massiveness but in wealth of architectural detail and sculptural adornment, vies with that of early Egypt or Chaldea. There alone did the art of writing develop. Yet today in those regions the density of the forest, the prevalence of deadly fevers, the extremely enervating temperature, and the steady humidity are as hostile to civilization as are the cold of the far north and the dryness of the desert.

The only explanation of this anomaly seems to be that in the past the climatic zones of the world have at certain periods been shifted farther toward the equator than they are at present. Practically all the geographers of America now believe that within the past two or three thousand years climatic pulsations have taken place whereby places like the dry Southwest have alternately experienced centuries of greater moisture than at present and centuries as dry as today or even drier. During the moist centuries greater storminess prevailed, so that the climate was apparently better not only for agriculture but for human

energy. At such times the standard of living was higher than now not only in the Southwest but in the Gulf States and in Mexico. In periods when the deserts of the southwestern United States were wet, the Maya region of Yucatan and Guatemala appears to have been relatively dry. Then the dry belt which now extends from northern Mexico to the northern tip of Yucatan apparently shifted southward. Such conditions would cause the forests of Yucatan and Guatemala to become much less dense than at present. This comparative deforestation would make agriculture easily possible where today it is out of the question. At the same time the relatively dry climate and the clearing away of the vegetation would to a large degree eliminate the malarial fevers and other diseases which are now such a terrible scourge in wet tropical countries. Then, too, the storms which at the present time give such variability to the climate of the United States would follow more southerly courses. In its stimulating qualities the climate of the home of the Mayas in the days of their prime was much more nearly like that which now prevails where civilization rises highest.

From first to last the civilization of America has been bound up with its physical environment. It

matters little whether we are dealing with the red race, the black, or the white. Nor does it matter whether we deal with one part of the continent or another. Wherever we turn we can trace the influence of mountains and plains, of rocks and metals from which tools are made, of water and its finny inhabitants, of the beasts of the chase from the hare to the buffalo, of domestic animals, of the native forests, grass-lands, and deserts, and, last but not least, of temperature, moisture, and wind in their direct effects upon the human body. At one stage of human development the possibilities of agriculture may be the dominant factor in man's life in early America. At another, domestic animals may be more important, and at still another, iron or waterways or some other factor may be predominant. It is the part of the later history of the American Continent to trace the effect of these various factors and to chronicle the influence that they have had upon man's progress.

BIBLIOGRAPHICAL NOTE

Although many books deal with the physical features of the Western Hemisphere and many others with the Indians, few deal with the two in relation to one another. One book, however, stands out preëminent in this respect, namely, Edward John Payne's *History of the New World Called America*, 2 vols. (1892–99). This book, which has never been finished, attempts to explain the conditions of life among the American aborigines as the result of geographical conditions, especially of the food supply. Where the author carries this attempt into the field of special customs and religious rites, he goes too far. Nevertheless his work is uncommonly stimulating and deserves the careful attention of the reader who would gain a broad grasp of the relation of geography to the history of the New World.

Two other good books which deal with the relation of geography to American history are Miss Ellen C. Semple's *American History and its Geographical Conditions* (1903) and A. P. Brigham's *Geographic Influences in American History* (1903). Both of these books interpret geography as if it included little except the form of the land. While they bring out clearly the effect of mountain barriers, indented coasts, and easy routes whether by land or water, they scarcely touch on the more subtle relationships between man on the one hand

and the climate, plants, and animals which form the dominant features of his physical environment on the other hand.

In their emphasis on the form of the land both Semple and Brigham follow the lead of W. M. Davis. In his admirable articles on America and the United States in *The Encyclopædia Britannica* (11th edition) and in *The International Geography* edited by H. R. Mill (1901), Davis has given an uncommonly clear and vivid description of the main physical features of the New World. Living beings, however, play little part in this description, so that the reader is not led to an understanding of how physical geography affects human actions.

Other good descriptions of the North American continent are found in the following books: I. C. Russell's *North America* (1904), Stanford's *Compendium of Modern Geography and Travel*, including the volumes on Canada, the United States, and Central America, and the great volumes on America in *The Earth and its Inhabitants* by Élisée Reclus, 19 vols. (1876–1894). Russell's book is largely physiographic but contains some good chapters on the Indians. In Stanford's *Compendium* the purpose is to treat man and nature in their relation to one another, but the relationships are not clearly brought out, and there is too much emphasis on purely descriptive and encyclopedic matter. So far as interest is concerned, the famous work by Élisée Reclus holds high rank. It is an encyclopedia of geographical facts arranged and edited in such a way that it has all the interest of a fine book of travel. Like most of the other books, however, it fails to bring out relationships.

As sources of information on the Indians, two books stand out with special prominence. *The American Race*,

by D. G. Brinton (1891), is a most scholarly volume devoted largely to a study of the Indians on a linguistic basis. It contains some general chapters, however, on the Indians and their environment, and these are most illuminating. The other book is the *Handbook of American Indians North of Mexico*, edited by F. W. Hodge, and published by the United States Bureau of Ethnology (Washington, 1897, 1910, 1911). Its two large volumes are arranged in encyclopedic form. The various articles are written by a large number of scholars, including practically all the students who were at work on Indian ethnology at the time of publication. Many of the articles are the best that have been written and will not only interest the general reader but will contribute to an understanding of what America was when the Indians came here and what it still is today.

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PART II

ELIZABETHAN SEA DOGS

A CHRONICLE
OF DRAKE AND HIS COMPANIONS
BY
WILLIAM WOOD

PREFATORY NOTE

CITIZEN, colonist, pioneer! These three words carry the history of the United States back to its earliest form in 'the Newe Worlde called America.' But who prepared the way for the pioneers from the Old World and what ensured their safety in the New? The title of the present volume, *Elizabethan Sea-Dogs*, gives the only answer. It was during the reign of Elizabeth, the last of the Tudor sovereigns of England, that Englishmen won the command of the sea under the consummate leadership of Sir Francis Drake, the first of modern admirals. Drake and his companions are known to fame as Sea-Dogs. They won the English right of way into Spain's New World. And Anglo-American history begins with that century of maritime adventure and naval war in which English sailors blazed and secured the long sea-trail for the men of every other kind who found or sought their fortunes in America.

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ELIZABETHAN SEA-DOGS

CHAPTER I

ENGLAND'S FIRST LOOK

In the early spring of 1476 the Italian Giovanni Caboto, who, like Christopher Columbus, was a seafaring citizen of Genoa, transferred his allegiance to Venice.

The Roman Empire had fallen a thousand years before. Rome now held temporal sway only over the States of the Church, which were weak in armed force, even when compared with the small republics, dukedoms, and principalities which lay north and south. But Papal Rome, as the head and heart of a spiritual empire, was still a world-power; and the disunited Italian states were first in the commercial enterprise of the age as well as in the glories of the Renaissance. North of the Papal domain, which cut the penin-

sula in two parts, stood three renowned Italian cities: Florence, the capital of Tuscany, leading the world in arts; Genoa, the home of Caboto and Columbus, teaching the world the science of navigation; and Venice, mistress of the great trade route between Europe and Asia, controlling the world's commerce.

Thus, in becoming a citizen of Venice, Giovanni Caboto the Genoese was leaving the best home of scientific navigation for the best home of sea-borne trade. His very name was no bad credential. Surnames often come from nicknames; and for a Genoese to be called *Il Caboto* was as much as for an Arab of the Desert to be known to his people as The Horseman. *Cabottággio* now means no more than coasting trade. But before there was any real ocean commerce it referred to the regular sea-borne trade of the time; and Giovanni Caboto must have either upheld an exceptional family tradition or struck out an exceptional line for himself to have been known as John the Skipper among the many other expert skippers hailing from the port of Genoa.

There was nothing strange in his being naturalized in Venice. Patriotism of the kind that keeps the citizen under the flag of his own country

was hardly known outside of England, France, and Spain. Though the Italian states used to fight each other, an individual Italian, especially when he was a sailor, always felt at liberty to seek his fortune in any one of them, or wherever he found his chance most tempting. So the Genoese Giovanni became the Venetian Zuan without any patriotic wrench. Nor was even the vastly greater change to plain John Cabot so very startling. Italian experts entered the service of a foreign monarch as easily as did the 'pay-fighting Swiss' or Hessian mercenaries. Columbus entered the Spanish service under Ferdinand and Isabella just as Cabot entered the English service under Henry VII. Giovanni—Zuan—John: it was all in a good day's work.

Cabot settled in Bristol, where the still existing guild of Merchant-Venturers was even then two centuries old. Columbus, writing of his visit to Iceland, says, 'the English, *especially those of Bristol*, go there with their merchandise.' Iceland was then what Newfoundland became, the best of distant fishing grounds. It marked one end of the line of English sea-borne commerce. The Levant marked the other. The Baltic formed an important branch. Thus English trade al-

ready stretched out over all the main lines. Long before Cabot's arrival a merchant prince of Bristol, named Canyng, who employed a hundred artificers and eight hundred seamen, was trading to Iceland, to the Baltic, and, most of all, to the Mediterranean. The trade with Italian ports stood in high favor among English merchants and was encouraged by the King; for in 1485, the first year of the Tudor dynasty, an English consul took office at Pisa and England made a treaty of reciprocity with Tuscany.

Henry VII, first of the energetic Tudors and grandfather of Queen Elizabeth, was a thrifty and practical man. Some years before the event about to be recorded in these pages Columbus had sent him a trusted brother with maps, globes, and quotations from Plato to prove the existence of lands to the west. Henry had troubles of his own in England. So he turned a deaf ear and lost a New World. But after Columbus had found America, and the Pope had divided all heathen countries between the crowns of Spain and Portugal, Henry decided to see what he could do.

Anglo-American history begins on the 5th of March, 1496, when the Cabots, father and three

sons, received the following patent from the King:

Henrie, by the grace of God, King of England and France, and Lord of Irelande, to all, to whom these presentes shall come, Greeting — Be it knowen, that We have given and granted, and by these presentes do give and grant for Us and Our Heyres, to our well beloved John Gabote, citizen of Venice, to Lewes, Sebastian, and Santius, sonnes of the sayde John, and to the heires of them and every of them, and their deputies, full and free authoritie, leave, and Power, to sayle to all Partes, Countreys, and Seas, of the East, of the West, and of the North, under our banners and ensignes, with five shippes, of what burden or quantitie soever they bee: and as many mariners or men as they will have with them in the saide shippes, upon their owne proper costes and charges, to seeke out, discover, and finde, whatsoever Iles, Countreyes, Regions, or Provinces, of the Heathennes and Infidelles, whatsoever they bee, and in what part of the worlde soever they bee, whiche before this time have been unknowen to all Christians. We have granted to them also, and to every of them, the heires of them, and every of them, and their deputies, and have given them licence to set up Our banners and ensignes in every village, towne, castel,

yle, or maine lande, of them newly founde. And that the aforesaide John and his sonnes, or their heires and assignes, may subdue, occupie, and possesse, all such townes, cities, castels, and yles, of them founde, which they can subdue, occupie, and possesse, as our vassailes and lieutenantes, getting unto Us the rule, title, and jurisdiction of the same villages, townes, castels, and firme lande so founde.

The patent then goes on to provide for a royalty to His Majesty of one-fifth of the net profits, to exempt the patentees from custom duty, to exclude competition, and to exhort good subjects of the Crown to help the Cabots in every possible way. This first of all English documents connected with America ends with these words: *Witnesse our Selfe at Westminster, the Fifth day of March, in the XI yeere of our reigne. HENRY R.*

To sayle to all Partes of the East, of the West, and of the North. The pointed omission of the word *South* made it clear that Henry had no intention of infringing Spanish rights of discovery. Spanish claims, however, were based on the Pope's division of all the heathen world and were by no means bounded by any rights of discovery already acquired.

Cabot left Bristol in the spring of 1497, a year after the date of his patent, not with the 'five shippes' the King had authorized, but in the little *Matthew*, with a crew of only eighteen men, nearly all Englishmen accustomed to the North Atlantic. The *Matthew* made Cape Breton, the easternmost point of Nova Scotia, on the 24th of June, the anniversary of St. John the Baptist, now the racial fête-day of the French Canadians. Not a single human inhabitant was to be seen in this wild new land, shaggy with forests primeval, fronted with bold, scarped shores, and beautiful with romantic deep bays leading inland, league upon league, past rugged forelands and rocky battlements keeping guard at the frontiers of the continent. Over these mysterious wilds Cabot raised St. George's Cross for England and the banner of St. Mark in souvenir of Venice. Had he now reached the fabled islands of the West or discovered other islands off the eastern coast of Tartary? He did not know. But he hurried back to Bristol with the news and was welcomed by the King and people. A Venetian in London wrote home to say that 'this fellow-citizen of ours, who went from Bristol in quest of new islands, is Zuan Caboto, whom the English now call a

great admiral. He dresses in silk; they pay him great honour; and everyone runs after him like mad.' The Spanish ambassador was full of suspicion, in spite of the fact that Cabot had not gone south. Had not His Holiness divided all Heathendom between the crowns of Spain and Portugal, to Spain the West and to Portugal the East; and was not this landfall within what the modern world would call the Spanish sphere of influence? The ambassador protested to Henry VII and reported home to Ferdinand and Isabella.

Henry VII meanwhile sent a little present 'To Hym that founde the new Isle—£10.' It was not very much. But it was about as much as nearly a thousand dollars now; and it meant full recognition and approval. This was a good start for a man who couldn't pay the King any royalty of twenty per cent. because he hadn't made a penny on the way. Besides, it was followed up by a royal annuity of twice the amount and by renewed letters-patent for further voyages and discoveries in the west. So Cabot took good fortune at the flood and went again.

This time there was the full authorized flotilla of five sail, of which one turned back and four sailed on. Somewhere on the way John Cabot

disappeared from history and his second son, Sebastian, reigned in his stead. Sebastian, like John, apparently wrote nothing whatever. But he talked a great deal; and in after years he seems to have remembered a good many things that never happened at all. Nevertheless he was a very able man in several capacities and could teach a courtier or a demagogue, as well as a geographer or exploiter of new claims, the art of climbing over other people's backs, his father's and his brothers' backs included. He had his troubles; for King Henry had pressed upon him recruits from the gaols, which just then were full of rebels. But he had enough seamen to manage the ships and plenty of cargo for trade with the undiscovered natives.

Sebastian perhaps left some of his three hundred men to explore Newfoundland. He knew they couldn't starve because, as he often used to tell his gaping listeners, the waters thereabouts were so thick with codfish that he had hard work to force his vessels through. This first of American fish stories, wildly improbable as it may seem, may yet have been founded on fact. When acres upon acres of the countless little capelin swim inshore to feed, and they themselves are preyed

on by leaping acres of voracious cod, whose own rear ranks are being preyed on by hungry seals, sharks, herring-hogs, or dogfish, then indeed the troubled surface of a narrowing bay is literally thick with the silvery flash of capelin, the dark tumultuous backs of cod, and the swirling rushes of the greater beasts of prey behind. Nor were certain other fish stories, told by Sebastian and his successors about the land of cod, without some strange truths to build on. Cod have been caught as long as a man and weighing over a hundred pounds. A whole hare, a big guillemot with his beak and claws, a brace of duck so fresh that they must have been swallowed alive, a rubber wading boot, and a very learned treatise complete in three volumes—these are a few of the curiosities actually found in sundry stomachs of the all-devouring cod.

The new-found cod banks were a mine of wealth for western Europe at a time when everyone ate fish on fast days. They have remained so ever since because the enormous increase of population has kept up a constantly increasing demand for natural supplies of food. Basques and English, Spaniards, French, and Portuguese, were presently fishing for cod all round the waters of

northeastern North America and were even then beginning to raise questions of national rights that have only been settled in this twentieth century after four hundred years.

Following the coast of Greenland past Cape Farewell, Sebastian Cabot turned north to look for the nearest course to India and Cathay, the lands of silks and spices, diamonds, rubies, pearls, and gold. John Cabot had once been as far as Mecca or its neighborhood, where he had seen the caravans that came across the Desert of Arabia from the fabled East. Believing the proof that the world was round, he, like Columbus and so many more, thought America was either the eastern limits of the Old World or an archipelago between the extremest east and west already known. Thus, in the early days before it was valued for itself, America was commonly regarded as a mere obstruction to navigation — the more solid the more exasperating. Now, in 1498, on his second voyage to America, John Cabot must have been particularly anxious to get through and show the King some better return for his money. But he simply disappears; and all we know is what various writers gleaned from his son Sebastian later on.

Sebastian said he coasted Greenland, through vast quantities of midsummer ice, until he reached 67° 30′ north, where there was hardly any night. Then he turned back and probably steered a southerly course for Newfoundland, as he appears to have completely missed what would have seemed to him the tempting way to Asia offered by Hudson Strait and Bay. Passing Newfoundland, he stood on south as far as the Virginia capes, perhaps down as far as Florida. A few natives were caught. But no real trade was done. And when the explorers had reported progress to the King the general opinion was that North America was nothing to boast of, after all.

A generation later the French sent out several expeditions to sail through North America and make discoveries by the way. Jacques Cartier's second, made in 1535, was the greatest and most successful. He went up the St. Lawrence as high as the site of Montreal, the head of ocean navigation, where, a hundred and forty years later, the local wits called La Salle's seigneury 'La Chine' in derision of his unquenchable belief in a transcontinental connection with Cathay.

But that was under the wholly new conditions of the seventeenth century, when both French

and English expected to make something out of what are now the United States and Canada. The point of the witling joke against La Salle was a new version of the old adage: Go farther and fare worse. The point of European opinion about America throughout the wonderful sixteenth century was that those who did go farther north than Mexico were certain to fare worse. And — whatever the cause — they generally did. So there was yet a third reason why the fame of Columbus eclipsed the fame of the Cabots even among those English-speaking peoples whose New-World home the Cabots were the first to find. To begin with, Columbus was the first of moderns to discover any spot in all America. Secondly, while the Cabots gave no writings to the world, Columbus did. He wrote for a mighty monarch and his fame was spread abroad by what we should now call a monster publicity campaign. Thirdly, our present point: the southern lands associated with Columbus and with Spain yielded immense and most romantic profits during the most romantic period of the sixteenth century. The northern lands connected with the Cabots did nothing of the kind.

Priority, publicity, and romantic wealth all

favored Columbus and the south then as the memory of them does to-day. The four hundredth anniversary of his discovery of an island in the Bahamas excited the interest of the whole world and was celebrated with great enthusiasm in the United States. The four hundredth anniversary of the Cabots' discovery of North America excited no interest at all outside of Bristol and Cape Breton and a few learned societies. Even contemporary Spain did more for the Cabots than that. The Spanish ambassador in London carefully collected every scrap of information and sent it home to his king, who turned it over as material for Juan de la Cosa's famous map, the first dated map of America known. This map, made in 1500 on a bullock's hide, still occupies a place of honor in the Naval Museum at Madrid; and there it stands as a contemporary geographic record to show that St. George's Cross was the first flag ever raised over eastern North America, at all events north of Cape Hatteras.

The Cabots did great things though they were not great men. John, as we have seen already, sailed out of the ken of man in 1498 during his second voyage. Sly Sebastian lived on and almost saw Elizabeth ascend the throne in 1558.

He had made many voyages and served many masters in the meantime. In 1512 he entered the service of King Ferdinand of Spain as a 'Captain of the Sea' with a handsome salary attached. Six years later the Emperor Charles V made him 'Chief Pilot and Examiner of Pilots.' Another six years and he is sitting as a nautical assessor to find out the longitude of the Moluccas in order that the Pope may know whether they fall within the Portuguese or Spanish hemisphere of exploitation. Presently he goes on a four years' journey to South America, is hindered by a mutiny, explores the River Plate (La Plata), and returns in 1530, about the time of the voyage to Brazil of 'Master William Haukins,' of which we shall hear later on.

In 1544 Sebastian made an excellent and celebrated map of the world which gives a wonderfully good idea of the coasts of North America from Labrador to Florida. This map, long given up for lost, and only discovered three centuries after it had been finished, is now in the National Library in Paris.[1]

[1] An excellent facsimile reproduction of it, together with a copy of the marginal text, is in the collections of the American Geographical Society of New York.

Sebastian had passed his threescore years and ten before this famous map appeared. But he was as active as ever twelve years later again. He had left Spain for England in 1548, to the rage of Charles V, who claimed him as a deserter, which he probably was. But the English boy-king, Edward VI, gave him a pension, which was renewed by Queen Mary; and his last ten years were spent in England, where he died in the odor of sanctity as Governor of the Muscovy Company and citizen of London. Whatever his faults, he was a hearty-good-fellow with his boon companions; and the following 'personal mention' about his octogenarian revels at Gravesend is well worth quoting exactly as the admiring diarist wrote it down on the 27th of April, 1556, when the pinnace *Serchthrift* was on the point of sailing to Muscovy and the Directors were giving it a great send-off.

After Master Cabota and divers gentlemen and gentlewomen had viewed our pinnace, and tasted of such cheer as we could make them aboard, they went on shore, giving to our mariners right liberal rewards; and the good old Gentleman, Master Cabota, gave to the poor most liberal alms, wishing them to pray for the good fortune and prosperous success of the *Serchthrift*, our pinnace. And then, at the sign of the Chris-

topher, he and his friends banqueted, and made me and them that were in the company great cheer; and for very joy that he had to see the towardness of our intended discovery he entered into the dance himself, amongst the rest of the young and lusty company—which being ended, he and his friends departed, most gently commending us to the governance of Almighty God.

CHAPTER II

HENRY VIII, KING OF THE ENGLISH SEA

THE leading pioneers in the Age of Discovery were sons of Italy, Spain, and Portugal.[1] Cabot, as we have seen, was an Italian, though he sailed for the English Crown and had an English crew. Columbus, too, was an Italian, though in the service of the Spanish Crown. It was the Portuguese Vasco da Gama who in the very year of John Cabot's second voyage (1498) found the great sea route to India by way of the Cape of Good Hope. Two years later the Cortereals, also Portuguese, began exploring the coasts of America as far northwest as Labrador. Twenty years later again the Portuguese Magellan, sailing for the King of Spain, discovered the strait still known by his name, passed through it into the

[1] Basque fishermen and whalers apparently forestalled Jacques Cartier's discovery of the St. Lawrence in 1535; perhaps they knew the mainland of America before John Cabot in 1497. But they left no written records; and neither founded an oversea dominion nor gave rights of discovery to their own or any other race.

Pacific, and reached the Philippines. There he was killed. But one of his ships went on to make the first circumnavigation of the globe, a feat which redounded to the glory of both Spain and Portugal. Meanwhile, in 1513, the Spaniard Balboa had crossed the Isthmus of Panama and waded into the Pacific, sword in hand, to claim it for his king. Then came the Spanish explorers — Ponce de Leon, De Soto, Coronado, and many more — and later on the conquerors and founders of New Spain — Cortés, Pizarro, and their successors.

During all this time neither France nor England made any lodgment in America, though both sent out a number of expeditions, both fished on the cod banks of Newfoundland, and each had already marked out her own 'sphere of influence.' The Portuguese were in Brazil; the Spaniards, in South and Central America. England, by right of the Bristol voyages, claimed the eastern coasts of the United States and Canada; France, in virtue of Cartier's discovery, the region of the St. Lawrence. But, while New Spain and New Portugal flourished in the sixteenth century, New France and New England were yet to rise.

In the sixteenth century both France and England were occupied with momentous things at

home. France was torn with religious wars. Tudor England had much work to do before any effective English colonies could be planted. Oversea dominions are nothing without sufficient sea power, naval and mercantile, to win, to hold, and foster them. But Tudor England was gradually forming those naval and merchant services without which there could have been neither British Empire nor United States.

Henry VIII had faults which have been trumpeted about the world from his own day to ours. But of all English sovereigns he stands foremost as the monarch of the sea. Young, handsome, learned, exceedingly accomplished, gloriously strong in body and in mind, Henry mounted the throne in 1509 with the hearty good will of nearly all his subjects. Before England could become the mother country of an empire overseas, she had to shake off her mediæval weaknesses, become a strongly unified modern state, and arm herself against any probable combination of hostile foreign states. Happily for herself and for her future colonists, Henry was richly endowed with strength and skill for his task. With one hand he welded England into political unity,

crushing disruptive forces by the way. With the other he gradually built up a fleet the like of which the world had never seen. He had the advantage of being more independent of parliamentary supplies than any other sovereign. From his thrifty father he had inherited what was then an almost fabulous sum — nine million dollars in cash. From what his friends call the conversion, and his enemies the spoliation, of Church property in England he obtained many millions more. Moreover, the people as a whole always rallied to his call whenever he wanted other national resources for the national defence.

Henry's unique distinction is that he effected the momentous change from an ancient to a modern fleet. This supreme achievement constitutes his real title to the lasting gratitude of English-speaking peoples. His first care when he came to the throne in 1509 was for the safety of the 'Broade Ditch,' as he called the English Channel. His last great act was to establish in 1546 'The Office of the Admiralty and Marine Affairs.' During the thirty-seven years between his accession and the creation of this Navy Board the pregnant change was made.

'King Henry loved a man.' He had an uner-

ring eye for choosing the right leaders. He delighted in everything to do with ships and shipping. He mixed freely with naval men and merchant skippers, visited the dockyards, promoted several improved types of vessels, and always befriended Fletcher of Rye, the shipwright who discovered the art of tacking and thereby revolutionized navigation. Nor was the King only a patron. He invented a new type of vessel himself and thoroughly mastered scientific gunnery. He was the first of national leaders to grasp the full significance of what could be done by broadsides fired from sailing ships against the mediæval type of vessel that still depended more on oars than on sails.

Henry's maritime rivals were the two greatest monarchs of continental Europe, Francis I of France and Charles V of Spain. Henry, Francis, and Charles were all young, all ambitious, and all exceedingly capable men. Henry had the fewest subjects, Charles by far the most. Francis had a compact kingdom well situated for a great European land power. Henry had one equally well situated for a great European sea power. Charles ruled vast dominions scattered over both the New World and the Old. The destinies of

mankind turned mostly on the rivalry between these three protagonists and their successors.

Charles V was heir to several crowns. He ruled Spain, the Netherlands, the Kingdom of the Two Sicilies, and important principalities in northern Italy. He was elected Emperor of Germany. He owned enormous oversea dominions in Africa; and the two Americas soon became New Spain. He governed each part of his European dominions by a different title and under a different constitution. He had no fixed imperial capital, but moved about from place to place, a legitimate sovereign everywhere and, for the most part, a popular one as well. It was his son Philip II who, failing of election as Emperor, lived only in Spain, concentrated the machinery of government in Madrid, and became so unpopular elsewhere. Charles had been brought up in Flanders; he was genial in the Flemish way; and he understood his various states in the Netherlands, which furnished him with one of his main sources of revenue. Another and much larger source of revenue poured in its wealth to him later on, in rapidly increasing volume, from North and South America.

Charles had inherited a long and bitter feud with France about the Burgundian dominions on

the French side of the Rhine and about domains in Italy; besides which there were many points of violent rivalry between things French and Spanish. England also had hereditary feuds with France, which had come down from the Hundred Years' War, and which had ended in her almost final expulsion from France less than a century before. Scotland, nursing old feuds against England and always afraid of absorption, naturally sided with France. Portugal, small and open to Spanish invasion by land, was more or less bound to please Spain.

During the many campaigns between Francis and Charles the English Channel swarmed with men-of-war, privateers, and downright pirates. Sometimes England took a hand officially against France. But, even when England was not officially at war, many Englishmen were privateers and not a few were pirates. Never was there a better training school of fighting seamanship than in and around the Narrow Seas. It was a continual struggle for an existence in which only the fittest survived. Quickness was essential. Consequently vessels that could not increase their speed were soon cleared off the sea.

Spain suffered a good deal by this continuous

raiding. So did the Netherlands. But such was the power of Charles that, although his navies were much weaker than his armies, he yet was able to fight by sea on two enormous fronts, first, in the Mediterranean against the Turks and other Moslems, secondly, in the Channel and along the coast, all the way from Antwerp to Cadiz. Nor did the left arm of his power stop there; for his fleets, his transports, and his merchantmen ranged the coasts of both Americas from one side of the present United States right round to the other.

Such, in brief, was the position of maritime Europe when Henry found himself menaced by the three Roman Catholic powers of Scotland, France, and Spain. In 1533 he had divorced his first wife, Catherine of Aragon, thereby defying the Pope and giving offence to Spain. He had again defied the Pope by suppressing the monasteries and severing the Church of England from the Roman discipline. The Pope had struck back with a bull of excommunication designed to make Henry the common enemy of Catholic Europe.

Henry had been steadily building ships for years. Now he redoubled his activity. He blooded the fathers of his daughter's sea-dogs by

smashing up a pirate fleet and sinking a flotilla of Flemish privateers. The mouth of the Scheldt, in 1539, was full of vessels ready to take a hostile army into England. But such a fighting fleet prepared to meet them that Henry's enemies forbore to strike.

In 1539, too, came the discovery of the art of tacking, by Fletcher of Rye, Henry's shipwright friend, a discovery forever memorable in the annals of seamanship. Never before had any kind of craft been sailed a single foot against the wind. The primitive dugout on which the prehistoric savage hoisted the first semblance of a sail, the ships of Tarshish, the Roman transport in which St. Paul was wrecked, and the Spanish caravels with which Columbus sailed to worlds unknown, were, in principle of navigation, all the same. But now Fletcher ran out his epoch-making vessel, with sails trimmed fore and aft, and dumbfounded all the shipping in the Channel by beating his way to windward against a good stiff breeze. This achievement marked the dawn of the modern sailing age.

And so it happened that in 1545 Henry, with a new-born modern fleet, was able to turn defiantly on Francis. The English people rallied

magnificently to his call. What was at that time an enormous army covered the lines of advance on London. But the fleet, though employing fewer men, was relatively a much more important force than the army; and with the fleet went Henry's own headquarters. His lifelong interest in his navy now bore the first-fruits of really scientific sea power on an oceanic scale. There was no great naval battle to fix general attention on one dramatic moment. Henry's strategy and tactics, however, were new and full of promise. He repeated his strategy of the previous war by sending out a strong squadron to attack the base at which the enemy's ships were then assembling; and he definitely committed the English navy, alone among all the navies in the world, to sailing-ship tactics, instead of continuing those founded on the rowing galley of immemorial fame. The change from a sort of floating army to a really naval fleet, from galleys moved by oars and depending on boarders who were soldiers, to ships moved by sails and depending on their broadside guns — this change was quite as important as the change in the nineteenth century from sails and smooth-bores to steam and rifled ordnance. It was, indeed, from at least one commanding

point of view, much more important; for it meant that England was easily first in developing the only kind of navy which would count in any struggle for oversea dominion after the discovery of America had made sea power no longer a question of coasts and landlocked waters but of all the outer oceans of the world.

The year that saw the birth of modern sea power is a date to be remembered in this history; for 1545 was also the year in which the mines of Potosi first aroused the Old World to the riches of the New; it was the year, too, in which Sir Francis Drake was born. Moreover, there was another significant birth in this same year. The parole aboard the Portsmouth fleet was *God save the King!* The answering countersign was *Long to reign over us!* These words formed the nucleus of the national anthem now sung round all the Seven Seas. The anthems of other countries were born on land. *God save the King!* sprang from the navy and the sea.

The Reformation quickened seafaring life in many ways. After Henry's excommunication every Roman Catholic crew had full Papal sanction for attacking every English crew that would

not submit to Rome, no matter how Catholic its faith might be. Thus, in addition to danger from pirates, privateers, and men-of-war, an English merchantman had to risk attack by any one who was either passionately Roman or determined to use religion as a cloak. Raids and reprisals grew apace. The English were by no means always lambs in piteous contrast to the Papal wolves. Rather, it might be said, they took a motto from this true Russian proverb: 'Make yourself a sheep and you'll find no lack of wolves.' But, rightly or wrongly, the general English view was that the Papal attitude was one of attack while their own was one of defence. Papal Europe of course thought quite the reverse.

Henry died in 1547, and the Lord Protector Somerset at once tried to make England as Protestant as possible during the minority of Edward VI, who was not yet ten years old. This brought every English seaman under suspicion in every Spanish port, where the Holy Office of the Inquisition was a great deal more vigilant and business-like than the Custom House or Harbor Master. Inquisitors had seized Englishmen in Henry's time. But Charles had stayed their hand. Now that the ruler of England was an open heretic, who

appeared to reject the accepted forms of Catholic belief as well as the Papal forms of Roman discipline, the hour had come to strike. War would have followed in ordinary times. But the Reformation had produced a cross-division among the subjects of all the Great Powers. If Charles went to war with a Protestant Lord Protector of England then some of his own subjects in the Netherlands would probably revolt. France had her Huguenots; England her ultra-Papists; Scotland some of both kinds. Every country had an unknown number of enemies at home and friends abroad. All feared war.

Somerset neglected the navy. But the seafaring men among the Protestants, as among those Catholics who were anti-Roman, took to privateering more than ever. Nor was exploration forgotten. A group of merchant-adventurers sent Sir Hugh Willoughby to find the Northeast Passage to Cathay. Willoughby's three ships were towed down the Thames by oarsmen dressed in sky-blue jackets. As they passed the palace at Greenwich they dipped their colors in salute. But the poor young king was too weak to come to the window. Willoughby met his death in Lapland. But Chancellor, his second-in-command,

got through to the White Sea, pushed on overland to Moscow, and returned safe in 1554, when Queen Mary was on the throne. Next year, strange to say, the charter of the new Muscovy Company was granted by Philip of Armada fame, now joint sovereign of England with his newly married wife, soon to be known as 'Bloody Mary.' One of the directors of the company was Lord Howard of Effingham, father of Drake's Lord Admiral, while the governor was our old friend Sebastian Cabot, now in his eightieth year. Philip was Crown Prince of the Spanish Empire, and his father, Charles V, was very anxious that he should please the stubborn English; for if he could only become both King of England and Emperor of Germany he would rule the world by sea as well as land. Philip did his ineffective best: drank English beer in public as if he liked it and made his stately Spanish courtiers drink it too and smile. He spent Spanish gold, brought over from America, and he got the convenient kind of Englishmen to take it as spy-money for many years to come. But with it he likewise sowed some dragon's teeth. The English sea-dogs never forgot the iron chests of Spanish New-World gold, and presently began to wonder whether there was no

sure way in far America by which to get it for themselves.

In the same year, 1555, the Marian attack on English heretics began and the sea became safer than the land for those who held strong anti-Papal views. The Royal Navy was neglected even more than it had been lately by the Lord Protector. But fighting traders, privateers, and pirates multiplied. The seaports were hotbeds of hatred against Mary, Philip, Papal Rome, and Spanish Inquisition. In 1556 Sebastian Cabot reappears, genial and prosperous as ever, and dances out of history at the sailing of the *Serchthrift*, bound northeast for Muscovy. In 1557 Philip came back to England for the last time and manœuvred her into a war which cost her Calais, the last English foothold on the soil of France. During this war an English squadron joined Philip's vessels in a victory over the French off Gravelines, where Drake was to fight the Armada thirty years later.

This first of the two battles fought at Gravelines brings us down to 1558, the year in which Mary died, Elizabeth succeeded her, and a very different English age began.

CHAPTER III

LIFE AFLOAT IN TUDOR TIMES

Two stories from Hakluyt's *Voyages* will illustrate what sort of work the English were attempting in America about 1530, near the middle of King Henry's reign. The success of 'Master Haukins' and the failure of 'Master Hore' are quite typical of several other adventures in the New World.

'Olde M. William Haukins of Plimmouth, a man for his wisdome, valure, experience, and skill in sea causes mueh esteemed and beloved of King Henry the eight, and being one of the principall Sea Captaines in the West partes of England in his time, not contented with the short voyages commonly then made onely to the knowen coastes of Europe, armed out a tall and goodlie ship of his owne, of the burthen of 250 tunnes, called the Pole of Plimmouth, wherewith he made three long and famous voyages vnto the coast of Brasill, a thing in those days very rare, especially to our

Nation.' Hawkins first went down the Guinea Coast of Africa, 'where he trafiqued with the Negroes, and tooke of them Oliphants' teeth, and other commodities which that place yeeldeth; and so arriving on the coast of Brasil, used there such discretion, and behaved himselfe so wisely with those savage people, that he grew into great familiaritie and friendship with them. Insomuch that in his 2 voyage one of the savage kings of the Countrey of Brasil was contented to take ship with him, and to be transported hither into England. This kinge was presented unto King Henry 8. The King and all the Nobilitie did not a little marvel; for in his cheeks were holes, and therein small bones planted, which in his Countrey was reputed for a great braverie.' The poor Brazilian monarch died on his voyage back, which made Hawkins fear for the life of Martin Cockeram, whom he had left in Brazil as a hostage. However, the Brazilians took Hawkins's word for it and released Cockeram, who lived another forty years in Plymouth. 'Olde M. William Haukins' was the father of Sir John Hawkins, Drake's companion in arms, whom we shall meet later. He was also the grandfather of Sir Richard Hawkins, another naval

hero, and of the second William Hawkins, one of the founders of the greatest of all chartered companies, the Honourable East India Company.

Hawkins knew what he was about. 'Master Hore' did not. Hore was a well-meaning, plausible fellow, good at taking up new-fangled ideas, bad at carrying them out, and the very cut of a wildcat company-promoter, except for his honesty. He persuaded 'divers young lawyers of the Innes of Court and Chancerie' to go to Newfoundland. A hundred and twenty men set off in this modern ship of fools, which ran into Newfoundland at night and was wrecked. There were no provisions; and none of the 'divers lawyers' seems to have known how to catch a fish. After trying to live on wild fruit they took to eating each other, in spite of Master Hore, who stood up boldly and warned them of the 'Fire to Come.' Just then a French fishing smack came in; whereupon the lawyers seized her, put her wretched crew ashore, and sailed away with all the food she had. The outraged Frenchmen found another vessel, chased the lawyers back to England, and laid their case before the King, who, 'out of his Royall Bountie,' reimbursed the

Frenchmen and let the 'divers lawyers' go scot free.

Hawkins and Hore, and others like them, were the heroes of travellers' tales. But what was the ordinary life of the sailor who went down to the sea in the ships of the Tudor age? There are very few quite authentic descriptions of life afloat before the end of the sixteenth century; and even then we rarely see the ship and crew about their ordinary work. Everybody was all agog for marvellous discoveries. Nobody, least of all a seaman, bothered his head about describing the daily routine on board. We know, however, that it was a lot of almost incredible hardship. Only the fittest could survive. Elizabethan landsmen may have been quite as prone to mistake comfort for civilization as most of the world is said to be now. Elizabethan sailors, when afloat, most certainly were not; and for the simple reason that there was no such thing as real comfort in a ship.

Here are a few verses from the oldest genuine English sea-song known. They were written down in the fifteenth century, before the discovery of America, and were probably touched up a little

by the scribe. The original manuscript is now in Trinity College, Cambridge. It is a true nautical composition — a very rare thing indeed; for genuine sea-songs didn't often get into print and weren't enjoyed by landsmen when they did. The setting is that of a merchantman carrying passengers whose discomforts rather amuse the 'schippemenne.'

Anon the master commandeth fast
To his ship-men in all the hast[e],
To dresse them [line up] soon about the mast
Their takeling to make.

With *Howe! Hissa!* then they cry,
'What howe! mate thou standest too nigh,
Thy fellow may not haul thee by:'
Thus they begin to crake [shout].

A boy or twain anon up-steyn [go aloft]
And overthwart the sayle-yerde leyn [lie]
Y-how! taylia! the remnant cryen [cry]
And pull with all their might.

Bestow the boat, boat-swain, anon,
That our pylgrymms may play thereon;
For some are like to cough and groan
Ere it be full midnight.

Haul the bowline! Now veer the sheet!
Cook, make ready anon our meat!
Our pylgrymms have no lust to eat:
I pray God give them rest.

Go to the helm! What ho! no neare[r]!
Steward, fellow! a pot of beer!
Ye shall have, Sir, with good cheer,
Anon all of the best.

Y-howe! Trussa! Haul in the brailes!
Thou haulest not! By God, thou failes[t].
O see how well our good ship sails!
And thus they say among.

. . . . . .

Thys meane'whyle the pylgrymms lie,
And have their bowls all fast them by,
And cry after hot malvesy —
'Their health for to restore.'

. . . . . .

Some lay their bookys on their knee,
And read so long they cannot see.
'Alas! mine head will split in three!'
Thus sayeth one poor wight.

. . . . . .

A sack of straw were there right good;
For some must lay them in their hood:
I had as lief be in the wood,
Without or meat or drink!

For when that we shall go to bed,
The pump is nigh our beddës head:
A man he were as good be dead
As smell thereof the stynke!

Howe—hissa! is still used aboard deepwatermen as *Ho — hissa!* instead of *Ho — hoist away! What ho, mate!* is also known afloat, though dying out. *Y-howe! taylia!* is *Yo — ho! tally!* or *Tally and belay!* which means hauling aft and making fast the sheet of a mainsail or foresail. *What ho! no nearer!* is *What ho! no higher* now. But old salts remember *no nearer!* and it may be still extant. Seasickness seems to have been the same as ever — so was the desperate effort to pretend one was not really feeling it:

And cry after hot malvesy—
'Their health for to restore.'

Here is another sea-song, one sung by the sea-dogs themselves. The doubt is whether the *Martial-men* are Navy men, as distinguished from merchant-service men aboard a king's ship, or whether they are soldiers who want to take all sailors down a peg or two. This seems the more

probable explanation. Soldiers 'ranked' sailors afloat in the sixteenth century; and Drake's was the first fleet in the world in which seamen-admirals were allowed to fight a purely naval action.

We be three poor Mariners, newly come from the Seas,
We spend our lives in jeopardy while others live at ease.
We care not for those Martial-men that do our states disdain,
But we care for those Merchant-men that do our states maintain.

A third old sea-song gives voice to the universal complaint that landsmen cheat sailors who come home flush of gold.

For Sailors they be honest men,
And they do take great pains,
But Land-men and ruffling lads
Do rob them of their gains.

Here, too, is some *Cordial Advice* against the wiles of the sea, addressed *To all rash young Men, who think to Advance their decaying Fortunes by Navigation*, as most of the sea-dogs (and gentlemen-adventurers like Gilbert, Raleigh, and Cavendish) tried to do.

You merchant men of Billingsgate,
I wonder how you thrive.
You bargain with men for six months
And pay them but for five.

This was an abuse that took a long time to die out. Even well on in the nineteenth century, and sometimes even on board of steamers, victualling was only by the lunar month though service went by the calendar.

A cursed cat with thrice three tails
Doth much increase our woe

is a poetical way of putting another seaman's grievance.

People who regret that there is such a discrepancy between genuine sea-songs and shore-going imitations will be glad to know that the *Mermaid* is genuine, though the usual air to which it was sung afloat was harsh and decidedly inferior to the one used ashore. This example of the old 'fore-bitters' (so-called because sung from the fore-bitts, a convenient mass of stout timbers near the foremast) did not luxuriate in the repetitions of its shore-going rival: *With a comb and a glass in her hand, her hand, her hand,* etc.

Solo. On Friday morn as we set sail
It was not far from land,
Oh, there I spied a fair pretty maid
With a comb and a glass in her hand.

Chorus. The stormy winds did blow,
And the raging seas did roar,
While we poor Sailors went to the tops
And the land lubbers laid below.

The anonymous author of a curious composition entitled *The Complaynt of Scotland*, written in 1548, seems to be the only man who took more interest in the means than in the ends of seamanship. He was undoubtedly a landsman. But he loved the things of the sea; and his work is well worth reading as a vocabulary of the lingo that was used on board a Tudor ship. When the seamen sang it sounded like 'an echo in a cave.' Many of the outlandish words were Mediterranean terms which the scientific Italian navigators had brought north. Others were of Oriental origin, which was very natural in view of the long connection between East and West at sea. Admiral, for instance, comes from the Arabic for a commander-in-chief. *Amir-al-bahr* means commander of the sea. Most of the nautical technicalities would strike a seaman of the present day

as being quite modern. The sixteenth-century skipper would be readily understood by a twentieth-century helmsman in the case of such orders as these: *Keep full and by! Luff! Con her! Steady! Keep close!* Our modern sailor in the navy, however, would be hopelessly lost in trying to follow directions like the following: *Make ready your cannons, middle culverins, bastard culverins, falcons, sakers, slings, headsticks, murderers, passevolants, bazzils, dogges, crook arquebusses, calivers, and hail shot!*

Another look at life afloat in the sixteenth century brings us once more into touch with America; for the old sea-dog DIRECTIONS FOR THE TAKYNG OF A PRIZE were admirably summed up in *The Seaman's Grammar*, which was compiled by 'Captaine John Smith, sometime Governour of Virginia and Admiral of New England' — 'Pocahontas Smith,' in fact.

'A sail!'

'How bears she? To-windward or lee-ward? Set him by the compass!'

'Hee stands right a-head' (*or* On the weather-bow, *or* lee-bow).

'Let fly your colours!' (if you have a consort —else not). 'Out with all your sails! A steadie man at the helm! Give him chace!'

'Hee holds his owne — No, wee gather on him, Captaine!'

Out goes his flag and pendants, also his waist-cloths and top-armings, which is a long red cloth . . . that goeth round about the shippe on the out-sides of all her upper works and fore and main-tops, as well for the countenance and grace of the shippe as to cover the men from being seen. He furls and slings his main-yard. In goes his sprit-sail. Thus they strip themselves into their fighting sails, which is, only the foresail, the main and fore topsails, because the rest should not be fired nor spoiled; besides, they would be troublesome to handle, hinder our sights and the using of our arms.

'He makes ready his close-fights, fore and aft.' [Bulkheads set up to cover men under fire] . . .

'Every man to his charge! Dowse your top-sail to salute him for the sea! Hail him with a noise of trumpets!'

'Whence is your ship?'

'Of Spain — whence is yours?'

'Of England.'

'Are you merchants or men of war?'

'We are of the Sea!'

He waves us to leeward with his drawn sword,

calls out 'Amain' for the King of Spain, and springs his luff [brings his vessel close by the wind].

'Give him a chase-piece with your broadside, and run a good berth a-head of him!'

'Done, done!'

'We have the wind of him, and now he tacks about!'

'Tack about also and keep your luff! Be yare at the helm! Edge in with him! Give him a volley of small shot, also your prow and broadside as before, and keep your luff!'

'He pays us shot for shot!'

'Well, we shall requite him!' . . .

'Edge in with him again! Begin with your bow pieces, proceed with your broad-side, and let her fall off with the wind to give him also your full chase, your weather-broad-side, and bring her round so that the stern may also discharge, and your tacks close aboard again!' . . .

'The wind veers, the sea goes too high to board her, and we are shot through and through, and between wind and water.'

'Try the pump! Bear up the helm! Sling a man overboard to stop the leaks, *that is*, truss him up around the middle in a piece of canvas and a rope, with his arms at liberty, with a mallet

and plugs lapped in oakum and well tarred, and a tar-pauling clout, which he will quickly beat into the holes the bullets made.'

'What cheer, Mates, is all Well?'

'All's well!'

'Then make ready to bear up with him again!'

'With all your great and small shot charge him, board him thwart the hawse, on the bow, midships, or, rather than fail, on his quarter; or make fast your grapplings to his close-fights and sheer off' [which would tear his cover down].

'Captain, we are foul of each other and the ship is on fire!'

'Cut anything to get clear and smother the fire with wet cloths!'

In such a case they will bee presentlie such friends as to help one the other all they can to get clear, lest they should both burn together and so sink: and, if they be generous, and the fire be quenched, they will drink kindly one to the other, heave their canns over-board, and begin again as before. . . .

'Chirurgeon, look to the wounded, and wind up the slain, and give them three guns for their funerals! Swabber, make clean the ship! Purser, record their names! Watch, be vigilant to keep your berth to windward, that we lose him not in

the night! Gunners, spunge your ordnance! Souldiers, scour your pieces! Carpenters, about your leaks! Boatswain and the rest, repair sails and shrouds! Cook, see you observe your directions against the morning watch!' . . .

'Boy, hallo! is the kettle boiled?'

'Ay, ay, Sir!'

'Boatswain, call up the men to prayer and breakfast!' . . .

Always have as much care to their wounded as to your own; and if there be either young women or aged men, use them nobly . . .

'Sound drums and trumpets: SAINT GEORGE FOR MERRIE ENGLAND!'

CHAPTER IV

ELIZABETHAN ENGLAND

Elizabethan England is the motherland, the true historic home, of all the different peoples who speak the sea-borne English tongue. In the reign of Elizabeth there was only one English-speaking nation. This nation consisted of a bare five million people, fewer than there are to-day in London or New York. But hardly had the Great Queen died before Englishmen began that colonizing movement which has carried their language the whole world round and established their civilization in every quarter of the globe. Within three centuries after Elizabeth's day the use of English as a native speech had grown quite thirtyfold. Within the same three centuries the number of those living under laws and institutions derived from England had grown a hundredfold.

The England of Elizabeth was an England of

great deeds, but of greater dreams. Elizabethan literature, take it for all in all, has never been surpassed; myriad-minded Shakespeare remains unequalled still. Elizabethan England was indeed 'a nest of singing birds.' Prose was often far too pedestrian for the exultant life of such a mighty generation. As new worlds came into their expectant ken, the glowing Elizabethans wished to fly there on the soaring wings of verse. To them the tide of fortune was no ordinary stream but the 'white-maned, proud, neck-arching tide' that bore adventurers to sea 'with pomp of waters unwithstood.'

The goodly heritage that England gave her offspring overseas included Shakespeare and the English Bible. The Authorized Version entered into the very substance of early American life. There was a marked difference between Episcopalian Virginia and Puritan New England. But both took their stand on this version of the English Bible, in which the springs of Holy Writ rejoiced to run through channels of Elizabethan prose. It is true that Elizabeth slept with her fathers before this book of books was printed, and that the first of the Stuarts reigned in her stead. Nevertheless the Authorized Version is pure Elizabethan.

All its translators were Elizabethans, as their dedication to King James, still printed with every copy, gratefully acknowledges in its reference to 'the setting of that bright Occidental Star, Queen Elizabeth of most happy memory.'

These words of the reverend scholars contain no empty compliment. Elizabeth was a great sovereign and, in some essential particulars, a very great national leader. This daughter of Henry VIII and his second wife, Anne Boleyn the debonair, was born a heretic in 1533. Her father was then defying both Spain and the Pope. Within three years after her birth her mother was beheaded; and by Act of Parliament Elizabeth herself was declared illegitimate. She was fourteen when her father died, leaving the kingdom to his three children in succession, Elizabeth being the third. Then followed the Protestant reign of the boy-king Edward VI, during which Elizabeth enjoyed security; then the Catholic reign of her Spanish half-sister, 'Bloody Mary,' during which her life hung by the merest thread.

At first, however, Mary concealed her hostility to Elizabeth because she thought the two daughters of Henry VIII ought to appear together in her

triumphal entry into London. From one point of view — and a feminine one at that — this was a fatal mistake on Mary's part: for never did Elizabeth show to more advantage. She was just under twenty, while Mary was nearly twice her age. Mary had, indeed, provided herself with one good foil in the person of Anne of Cleves, the 'Flemish mare' whose flat coarse face and lumbering body had disgusted King Henry thirteen years before, when Cromwell had foisted her upon him as his fourth wife. But with poor, fat, straw-colored Anne on one side, and black-and-sallow, foreign-looking, man-voiced Mary on the other, the thoroughly English Princess Elizabeth took London by storm on the spot. Tall and majestic, she was a magnificent example of the finest Anglo-Norman type. Always 'the glass of fashion' and then the very 'mould of form' her splendid figure looked equally well on horseback or on foot. A little full in the eye, and with a slightly aquiline nose, she appeared, as she really was, keenly observant and commanding. Though these two features just prevented her from being a beauty, the bright blue eyes and the finely chiselled nose were themselves quite beautiful enough. Nor was she less taking

to the ear than to the eye; for, in marked contrast to gruff foreign Mary and wheezy foreign Anne, she had a rich, clear, though rather too loud, English voice. When the Court reined up and dismounted, Elizabeth became even more the centre of attraction. Mary marched stiffly on. Anne plodded after. But as for Elizabeth — perfect in dancing, riding, archery, and all the sports of chivalry — 'she trod the ling like a buck in spring, and she looked like a lance in rest.'

When Elizabeth succeeded Mary in the autumn of 1558, she had dire need of all she had learnt in her twenty-five years of adventurous life. Fortunately for herself and, on the whole, most fortunately for both England and America, she had a remarkable power of inspiring devotion to the service of their queen and country in men of both the cool and ardent types; and this long after her personal charms had gone. Government, religion, finance, defence, and foreign affairs were in a perilous state of flux, besides which they have never been more distractingly mixed up with one another. Henry VII had saved money for twenty-five years. His three successors had spent it lavishly for fifty. Henry VIII had kept

the Church Catholic in ritual while making it purely national in government. The Lord Protector Somerset had made it as Protestant as possible under Edward VI. Mary had done her best to bring it back to the Pope. Home affairs were full of doubts and dangers, though the great mass of the people were ready to give their handsome young queen a fair chance and not a little favor. Foreign affairs were worse. France was still the hereditary enemy; and the loss of Calais under Mary had exasperated the whole English nation. Scotland was a constant menace in the north. Spain was gradually changing from friend to foe. The Pope was disinclined to recognize Elizabeth at all.

To understand how difficult her position was we must remember what sort of constitution England had when the germ of the United States was forming. The Roman Empire was one constituent whole from the emperor down. The English-speaking peoples of to-day form constituent wholes from the electorate up. In both cases all parts were and are in constant relation to the whole. The case of Elizabethan England, however, was very different. There was neither despotic unity from above nor democratic unity

from below, but a mixed and fluctuating kind of government in which Crown, nobles, parliament, and people formed certain parts which had to be put together for each occasion. The accepted general idea was that the sovereign, supreme as an individual, looked after the welfare of the country in peace and war so far as the Crown estates permitted; but that whenever the Crown resources would not suffice then the sovereign could call on nobles and people for whatever the common weal required. *Noblesse oblige.* In return for the estates or monopolies which they had acquired the nobles and favored commoners were expected to come forward with all their resources at every national crisis precisely as the Crown was expected to work for the common weal at all times. When the resources of the Crown and favored courtiers sufficed, no parliament was called; but whenever they had to be supplemented then parliament met and voted whatever it approved. Finally, every English freeman was required to do his own share towards defending the country in time of need, and he was further required to know the proper use of arms.

The great object of every European court during early modern times was to get both the

old feudal nobility and the newly promoted commoners to revolve round the throne as round the centre of their solar system. By sheer force of character — for the Tudors had no overwhelming army like the Roman emperors' — Henry VIII had succeeded wonderfully well. Elizabeth now had to piece together what had been broken under Edward VI and Mary. She, too, succeeded —and with the hearty goodwill of nearly all her subjects.

Mary had left the royal treasury deeply in debt. Yet Elizabeth succeeded in paying off all arrears and meeting new expenditure for defence and for the court. The royal income rose. England became immensely richer and more prosperous than ever before. Foreign trade increased by leaps and bounds. Home industries flourished and were stimulated by new arrivals from abroad, because England was a safe asylum for the craftsmen whom Philip was driving from the Netherlands, to his own great loss and his rival's gain.

English commercial life had been slowly emerging from mediæval ways throughout the fifteenth century. With the beginning of the sixteenth

the rate of emergence had greatly quickened. The soil-bound peasant who produced enough food for his family from his thirty acres was being gradually replaced by the well-to-do yeoman who tilled a hundred acres and upwards. Such holdings produced a substantial surplus for the market. This increased the national wealth, which, in its turn, increased both home and foreign trade. The peasant merely raised a little wheat and barley, kept a cow, and perhaps some sheep. The yeoman or tenant farmer had sheep enough for the wool trade besides some butter, cheese, and meat for the nearest growing town. He began to 'garnish his cupboards with pewter and his joined beds with tapestry and silk hangings, and his tables with carpets and fine napery.' He could even feast his neighbors and servants after shearing day with new-fangled foreign luxuries like dates, mace, raisins, currants, and sugar.

But Elizabethan society presented striking contrasts. In parts of England, the practice of engrossing and enclosing holdings was increasing, as sheep-raising became more profitable than farming. The tenants thus dispossessed either swelled the ranks of the vagabonds who infested

the highways or sought their livelihood at sea or in London, which provided the two best openings for adventurous young men. The smaller provincial towns afforded them little opportunity, for there the trades were largely in the hands of close corporations descended from the mediæval craft guilds. These were eventually to be swept away by the general trend of business. Their dissolution had indeed already begun; for smart village craftsmen were even then forming the new industrial settlements from which most of the great manufacturing towns of England have sprung. Camden the historian found Birmingham full of ringing anvils, Sheffield 'a town of great name for the smiths therein,' Leeds renowned for cloth, and Manchester already a sort of cottonopolis, though the 'cottons' of those days were still made of wool.

There was a wages question then as now. There were demands for a minimum living wage. The influx of gold and silver from America had sent all prices soaring. Meat became almost prohibitive for the 'submerged tenth' — there was a rapidly submerging tenth. Beef rose from one cent a pound in the forties to four in 1588, the year of the Armada. How would the lowest

paid of craftsmen fare on twelve cents a day, with butter at ten cents a pound? Efforts were made, again and again, to readjust the ratio between prices and wages. But, as a rule, prices increased much faster than wages.

All these things — the increase of surplus hands, the high cost of living, grievances about wages and interest — tended to make the farms and workshops of England recruiting-grounds for the sea; and the young men would strike out for themselves as freighters, traders, privateers, or downright pirates, lured by the dazzling chance of great and sudden wealth.

'The gamble of it' was as potent then as now, probably more potent still. It was an age of wild speculation accompanied by all the usual evils that follow frenzied ways. It was also an age of monopoly. Both monopoly and speculation sent recruits into the sea-dog ranks. Elizabeth would grant, say, to Sir Walter Raleigh, the monopoly of sweet wines. Raleigh would naturally want as much sweet wine imported as England could be induced to swallow. So, too, would Elizabeth, who got the duty. Crews would be wanted for the monopolistic ships. They would also be wanted for 'free-trading'

vessels, that is, for the ships of the smugglers who underbid, undersold, and tried to overreach the monopolist, who represented law, though not quite justice. But speculation ran to greater extremes than either monopoly or smuggling. Shakespeare's 'Putter-out of five for one' was a typical Elizabethan speculator exploiting the riskiest form of sea-dog trade for all — and sometimes for more than all — that it was worth. A merchant-adventurer would pay a capitalist, say, a thousand pounds as a premium to be forfeited if his ship should be lost, but to be repaid by the capitalist fivefold to the merchant if it returned. Incredible as it may seem to us, there were shrewd money-lenders always ready for this sort of deal in life — or life-and-death — insurance: an eloquent testimony to the risks encountered in sailing unknown seas in the midst of well-known dangers.

Marine insurance of the regular kind was, of course, a very different thing. It was already of immemorial age, going back certainly to mediæval and probably to very ancient times. All forms of insurance on land are mere mushrooms by comparison. Lloyd's had not been heard of. But there were plenty of smart Elizabethan under-

writers already practising the general principles which were to be formally adopted two hundred years later, in 1779, at Lloyd's Coffee House. A policy taken out on the *Tiger* immortalized by Shakespeare would serve as a model still. And what makes it all the more interesting is that the Elizabethan underwriters calculated the *Tiger's* chances at the very spot where the association known as Lloyd's transacts its business to-day, the Royal Exchange in London. This, in turn, brings Elizabeth herself upon the scene; for when she visited the Exchange, which Sir Thomas Gresham had built to let the merchants do their street work under cover, she immediately grasped its full significance and 'caused it by an Herald and a Trumpet to be proclaimed The Royal Exchange,' the name it bears to-day. An Elizabethan might well be astonished by what he would see at any modern Lloyd's. Yet he would find the same essentials; for the British Lloyd's, like most of its foreign imitators, is not a gigantic insurance company at all, but an association of cautiously elected members who carry on their completely independent private business in daily touch with each other — precisely as Elizabethans did. Lloyd's method differs wholly from ordi-

nary insurance. Instead of insuring vessel and cargo with a single company or man the owner puts his case before Lloyd's, and any member can then write his name underneath for any reasonable part of the risk. The modern 'underwriter,' all the world over, is the direct descendant of the Elizabethan who wrote his name under the conditions of a given risk at sea.

Joint-stock companies were in one sense old when Elizabethan men of business were young. But the Elizabethans developed them enormously. 'Going shares' was doubtless prehistoric. It certainly was ancient, mediæval, and Elizabethan. But those who formerly went shares generally knew each other and something of the business too. The favorite number of total shares was just sixteen. There were sixteen land-shares in a Celtic household, sixteen shares in Scottish vessels not individually owned, sixteen shares in the theatre by which Shakespeare 'made his pile.' But sixteenths, and even hundredths, were put out of date when speculation on the grander scale began and the area of investment grew. The New River Company, for supplying London with water, had only a few shares then, as it continued to have down to our own day, when they

stood at over a thousand times par. The Ulster 'Plantation' in Ireland was more remote and appealed to more investors and on wider grounds — sentimental grounds, both good and bad, included. The Virginia 'Plantation' was still more remote and risky and appealed to an ever-increasing number of the speculating public. Many an investor put money on America in much the same way as a factory hand to-day puts money on a horse he has never seen or has never heard of otherwise than as something out of which a lot of easy money can be made provided luck holds good.

The modern prospectus was also in full career under Elizabeth, who probably had a hand in concocting some of the most important specimens. Lord Bacon wrote one describing the advantages of the Newfoundland fisheries in terms which no promoter of the present day could better. Every type of prospectus was tried on the investing public, some genuine, many doubtful, others as outrageous in their impositions on human credulity as anything produced in our own times. The company-promoter was abroad, in London, on 'Change, and at court. What with royal favor, social prestige, general prosperity, the new na-

tional eagerness to find vent for surplus commodities, and, above all, the spirit of speculation fanned into flame by the real and fabled wonders of America, what with all this the investing public could take its choice of 'going the limit' in a hundred different and most alluring ways. England was surprised at her own investing wealth. The East India Company raised eight million dollars with ease from a thousand shareholders and paid a first dividend of 87½ per cent. Spices, pearls, and silks came pouring into London; and English goods found vent increasingly abroad.

Vastly expanding business opportunities of course produced the spirit of the trust — and of very much the same sort of trust that Americans think so ultra-modern now. Monopolies granted by the Crown and the volcanic forces of widespread speculation prevented some of the abuses of the trust. But there were Elizabethan trusts, for all that, though many a promising scheme fell through. The Feltmakers' Hat Trust is a case in point. They proposed buying up all the hats in the market so as to oblige all dealers to depend upon one central warehouse. Of course they issued a prospectus showing how everyone concerned would benefit by this benevolent plan.

Ben Jonson and other playwrights were quick to seize the salient absurdities of such an advertisement. In *The Staple of News* Jonson proposed a News Trust to collect all the news of the world, corner it, classify it into authentic, apocryphal, barber's gossip, and so forth, and then sell it, for the sole benefit of the consumer, in lengths to suit all purchasers. In *The Devil is an Ass* he is a little more outspoken.

> We'll take in citizens, commoners, and aldermen
> To bear the charge, and blow them off again
> Like so many dead flies. . . .

This was exactly what was at that very moment being done in the case of the Alum Trust. All the leading characters of much more modern times were there already; Fitzdottrell, ready to sell his estates in order to become His Grace the Duke of Drown'dland, Gilthead, the London moneylender who 'lives by finding fools,' and My Lady Tailbush, who pulls the social wires at court. And so the game went on, usually with the result explained by Shakespeare's fisherman in *Pericles:*

> 'I marvel how the fishes live in the sea'—
> 'Why, as men do a-land: the great ones eat up the little ones.'

The Newcastle coal trade grew into something very like a modern American trust with the additional advantage of an authorized government monopoly so long as the agreed-upon duty was paid. Then there was the Starch Monopoly, a very profitable one because starch was a new delight which soon enabled Elizabethan fops to wear ruffed collars big enough to make their heads — as one irreverent satirist exclaimed — 'look like John Baptist's on a platter.'

But America? Could not America defeat the machinations of all monopolies and other trusts? Wasn't America the land of actual gold and silver where there was plenty of room for everyone? There soon grew up a wild belief that you could tap America for precious metals almost as its Indians tapped maple trees for sugar. The 'Mountains of Bright Stones' were surely there. Peru and Mexico were nothing to these. Only find them, and 'get-rich-quick' would be the order of the day for every true adventurer. These mountains moved about in men's imaginations and on prospectors' maps, always ahead of the latest pioneer, somewhere behind the Back of Beyond. They and their glamour died hard. Even that staid geographer of a later day, Thos.

Jeffreys, added to his standard atlas of America, in 1760, this item of information on the Far Northwest: *Hereabouts are supposed to be the Mountains of Bright Stones mentioned in the Map of ye Indian Ochagach.*

Speculation of the wildcat kind was bad. But it was the seamy side of a praiseworthy spirit of enterprise. Monopoly seems worse than speculation. And so, in many ways, it was. But we must judge it by the custom of its age. It was often unjust and generally obstructive. But it did what neither the national government nor joint-stock companies had yet learnt to do. Monopoly went by court favor, and its rights were often scandalously let and sometimes sublet as well. But, on the whole, the Queen, the court, and the country really meant business, and monopolists had either to deliver the goods or get out. Monopolists sold dispensations from unworkable laws, which was sometimes a good thing and sometimes a bad. They sold licenses for indulgence in forbidden pleasures, not often harmless. They thought out and collected all kinds of indirect taxation and had to face all the troubles that confront the framers of a tariff policy to-day. Most of all, however, in a rough-and-

ready way they set a sort of Civil Service going. They served as Boards of Trade, Departments of the Interior, Customs, Inland Revenue, and so forth. What Crown and Parliament either could not or would not do was farmed out to monopolists. Like speculation the system worked both ways, and frequently for evil. But, like the British constitution, though on a lower plane, it worked.

A monopoly at home — like those which we have been considering — was endurable because it was a working compromise that suited existing circumstances more or less, and that could be either mended or ended as time went on. But a general foreign monopoly — like Spain's monopoly of America — was quite unendurable. Could Spain not only hold what she had discovered and was exploiting but also extend her sphere of influence over what she had not discovered? Spain said Yes. England said No. The Spaniards looked for tribute. The English looked for trade. In government, in religion, in business, in everything, the two great rivals were irreconcilably opposed. Thus the lists were set; and sea-dog battles followed.

Elizabeth was an exceedingly able woman of business and was practically president of all the

great joint-stock companies engaged in oversea trade. Wherever a cargo could be bought or sold there went an English ship to buy or sell it. Whenever the authorities in foreign parts tried discrimination against English men or English goods, the English sea-dogs growled and showed their teeth. And if the foreigners persisted, the sea-dogs bit them.

Elizabeth was extravagant at court; but not without state motives for at least a part of her extravagance. A brilliant court attracted the upper classes into the orbit of the Crown while it impressed the whole country with the sovereign's power. Courtiers favored with monopolies had to spend their earnings when the state was threatened. And might not the Queen's vast profusion of jewelry be turned to account at a pinch? Elizabeth could not afford to be generous when she was young. She grew to be stingy when she was old. But she saved the state by sound finance as well as by arms in spite of all her pomps and vanities. She had three thousand dresses, and gorgeous ones at that, during the course of her reign. Her bathroom was wainscoted with Venetian mirrors so that she could see 'nine-and-ninety' reflections of her very comely person as

she dipped and splashed or dried her royal skin. She set a hot pace for all the votaries of dress to follow. All kinds of fashions came in from abroad with the rush of new-found wealth; and so, instead of being sanely beautiful, they soon became insanely bizarre. 'An Englishman,' says Harrison, 'endeavouring to write of our attire, gave over his travail, and only drew the picture of a naked man, since he could find no kind of garment that could please him any whiles together.

> I am an English man and naked I stand here,
> Musing in my mind what raiment I shall were;
> For now I will were this, and now I will were that;
> And now I will were I cannot tell what.

Except you see a dog in a doublet you shall not see any so disguised as are my countrymen of England. Women also do far exceed the lightness of our men. What shall I say of their galligascons to bear out their attire and make it fit plum round?' But the wives of 'citizens and burgesses,' like all *nouveaux riches*, were still more bizarre than the courtiers. 'They cannot tell when or how to make an end, being women in whom all kind of curiosity is to be seen in far greater measure than in women of higher calling.

I might name hues devised for the nonce, ver d'oye 'twixt green and yallow, peas-porridge tawny, popinjay blue, and the Devil-in-the-head.'

Yet all this crude absurdity, 'from the courtier to the carter,' was the glass reflecting the constantly increasing sea-borne trade, ever pushing farther afield under the stimulus and protection of the sea-dogs. And the Queen took precious good care that it all paid toll to her treasury through the customs, so that she could have more money to build more ships. And if her courtiers did stuff their breeches out with sawdust, she took equally good care that each fighting man among them donned his uniform and raised his troops or fitted out his ships when the time was ripe for action.

CHAPTER V

HAWKINS AND THE FIGHTING TRADERS

Said Francis I of France to Charles V, King of Spain: 'Your Majesty and the King of Portugal have divided the world between you, offering no part of it to me. Show me, I pray you, the will of our father Adam, so that I may see if he has really made you his only universal heirs!' Then Francis sent out the Italian navigator Verrazano, who first explored the coast from Florida to Newfoundland. Afterwards Jacques Cartier discovered the St. Lawrence; Frenchmen took Havana twice, plundered the Spanish treasure-ships, and tried to found colonies — Catholic in Canada, Protestant in Florida and Brazil.

Thus, at the time when Elizabeth ascended the throne of England in 1558, there was a long-established New Spain extending over Mexico, the West Indies, and most of South America;

a small New Portugal confined to part of Brazil; and a shadowy New France running vaguely inland from the Gulf of St. Lawrence, nowhere effectively occupied, and mostly overlapping prior English claims based on the discoveries of the Cabots.

England and France had often been enemies. England and Spain had just been allied in a war against France as well as by the marriage of Philip and Mary. William Hawkins had traded with Portuguese Brazil under Henry VIII, as the Southampton merchants were to do later on. English merchants lived in Lisbon and Cadiz; a few were even settled in New Spain; and a friendly Spaniard had been so delighted by the prospective union of the English with the Spanish crown that he had given the name of Londres (London) to a new settlement in the Argentine Andes.

Presently, however, Elizabethan England began to part company with Spain, to become more anti-Papal, to sympathize with Huguenots and other heretics, and, like Francis I, to wonder why an immense new world should be nothing but New Spain. Besides, Englishmen knew what the rest of Europe knew, that the discovery of

Potosi had put out of business nearly all the Old-World silver mines, and that the Burgundian Ass (as Spanish treasure-mules were called, from Charles's love of Burgundy) had enabled Spain to make conquests, impose her will on her neighbors, and keep paid spies in every foreign court, the English court included. Londoners had seen Spanish gold and silver paraded through the streets when Philip married Mary — '27 chests of bullion, 99 horseloads + 2 cartloads of gold and silver coin, and 97 boxes full of silver bars!' Moreover, the Holy Inquisition was making Spanish seaports pretty hot for heretics. In 1562, twenty-six English subjects were burnt alive in Spain itself. Ten times as many were in prison. No wonder sea-dogs were straining at the leash.

Neither Philip nor Elizabeth wanted war just then, though each enjoyed a thrust at the other by any kind of fighting short of that, and though each winked at all kinds of armed trade, such as privateering and even downright piracy. The English and Spanish merchants had commercial connections going back for centuries; and business men on both sides were always ready to do a good stroke for themselves.

This was the state of affairs in 1562 when young

John Hawkins, son of 'Olde Master William,' went into the slave trade with New Spain. Except for the fact that both Portugal and Spain allowed no trade with their oversea possessions in any ships but their own, the circumstances appeared to favor his enterprise. The American Indians were withering away before the atrocious cruelties of the Portuguese and Spaniards, being either killed in battle, used up in merciless slavery, or driven off to alien wilds. Already the Portuguese had commenced to import negroes from their West African possessions, both for themselves and for trade with the Spaniards, who had none. Brazil prospered beyond expectation and absorbed all the blacks that Portuguese shipping could supply. The Spaniards had no spare tonnage at the time.

John Hawkins, aged thirty, had made several trips to the Canaries. He now formed a joint-stock company to trade with the Spaniards farther off. Two Lord Mayors of London and the Treasurer of the Royal Navy were among the subscribers. Three small vessels, with only two hundred and sixty tons between them, formed the flotilla. The crews numbered just a hundred men. 'At Teneriffe he received friendly treatment. From

thence he passed to Sierra Leona, where he stayed a good time, and got into his possession, partly by the sword and partly by other means, to the number of 300 Negroes at the least, besides other merchandises. . . . With this prey he sailed over the ocean sea unto the island of Hispaniola [Hayti] . . . and here he had reasonable utterance [sale] of his English commodities, as also of some part of his Negroes, trusting the Spaniards no further than that by his own strength he was able still to master them.' At 'Monte Christi, another port on the north side of Hispaniola . . . he made vent of [sold] the whole number of his Negroes, for which he received by way of exchange such a quantity of merchandise that he did not only lade his own three ships with hides, ginger, sugars, and some quantity of pearls, but he freighted also two other hulks with hides and other like commodities, which he sent into Spain,' where both hulks and hides were confiscated as being contraband.

Nothing daunted, he was off again in 1564 with four ships and a hundred and seventy men. This time Elizabeth herself took shares and lent the *Jesus of Lubeck*, a vessel of seven hundred tons which Henry VIII had bought for the navy.

Nobody questioned slavery in those days. The great Spanish missionary Las Casas denounced the Spanish atrocities against the Indians. But he thought negroes, who could be domesticated, would do as substitutes for Indians, who could not be domesticated. The Indians withered at the white man's touch. The negroes, if properly treated, throve, and were safer than among their enemies at home. Such was the argument for slavery; and it was true so far as it went. The argument against, on the score of ill treatment, was only gradually heard. On the score of general human rights it was never heard at all.

'At departing, in cutting the foresail lashings a marvellous misfortune happened to one of the officers in the ship, who by the pulley of the sheet was slain out of hand.' Hawkins 'appointed all the masters of his ships an Order for the keeping of good company in this manner: — The small ships to be always ahead and aweather of the *Jesus*, and to speak twice a-day with the *Jesus* at least. . . . If the weather be extreme, that the small ships cannot keep company with the *Jesus*, then all to keep company with the *Solomon*. . . . If any happen to any misfortune, then to show two lights, and to shoot off a piece

of ordnance. If any lose company and come in sight again, to make three yaws [zigzags in their course] and strike the mizzen three times. SERVE GOD DAILY. LOVE ONE ANOTHER. PRESERVE YOUR VICTUALS. BEWARE OF FIRE, AND KEEP GOOD COMPANY.'

John Sparke, the chronicler of this second voyage, was full of curiosity over every strange sight he met with. He was also blessed with the pen of a ready writer. So we get a story that is more vivacious than Hakluyt's retelling of the first voyage or Hawkins's own account of the third. Sparke saw for the first time in his life negroes, Caribs, Indians, alligators, flying-fish, flamingoes, pelicans, and many other strange sights. Having been told that Florida was full of unicorns he at once concluded that it must also be full of lions; for how could the one kind exist without the other kind to balance it? Sparke was a soldier who never found his sea legs. But his diary, besides its other merits, is particularly interesting as being the first account of America ever written by an English eye-witness.

Hawkins made for Teneriffe in the Canaries, off the west of Africa. There, to everybody's great 'amaze,' the Spaniards 'appeared levelling of

bases [small portable cannon] and arquebuses, with divers others, to the number of fourscore, with halberds, pikes, swords, and targets.' But when it was found that Hawkins had been taken for a privateer, and when it is remembered that four hundred privateering vessels — English and Huguenot — had captured seven hundred Spanish prizes during the previous summer of 1563, there was and is less cause for 'amaze.' Once explanations had been made, 'Peter de Ponte gave Master Hawkins as gentle entertainment as if he had been his own brother.' Peter was a trader with a great eye for the main chance.

Sparke was lost in wonder over the famous Arbol Santo tree of Ferro, 'by the dropping whereof the inhabitants and cattle are satisfied with water, for other water they have none on the island.' This is not quite the traveller's tale it appears to be. There are three springs on the island of Teneriffe. But water is scarce, and the Arbol Santo, a sort of gigantic laurel standing alone on a rocky ledge, did actually supply two cisterns, one for men and the other for cattle. The morning mist condensing on the innumerable smooth leaves ran off and was caught in suitable conduits.

In Africa Hawkins took many 'Sapies which do inhabit about Rio Grande [now the Jeba River] which do jag their flesh, both legs, arms, and bodies as workmanlike as a jerkin-maker with us pinketh a jerkin.' It is a nice question whether these Sapies gained or lost by becoming slaves to white men; for they were already slaves to black conquerors who used them as meat with the vegetables they forced them to raise. The Sapies were sleek pacifists who found too late that the warlike Samboses, who inhabited the neighboring desert, were not to be denied.

'In the island of Sambula we found almadies or canoas, which are made of one piece of wood, digged out like a trough, but of a good proportion, being about eight yards long and one in breadth, having a beak-head and a stern very proportionably made, and on the outside artificially carved, and painted red and blue.' Neither *almadie* nor *canoa* is, of course, an African word. One is Arabic for a cradle (*el-mahd*); the other, from which we get *canoe*, is what the natives told Columbus they called their dugouts; and dugout canoes are very like primitive cradles. Thus Sparke was the first man to record in English, from actual experience, the aboriginal craft whose

name, both East and West, was suggested to primeval man by the idea of his being literally 'rocked in the cradle of the deep.'

Hawkins did not have it all his own way with the negroes, by whom he once lost seven of his own men killed and twenty-seven wounded. 'But the captain in a singular wise manner carried himself with countenance very cheerful outwardly, although inwardly his heart was broken in pieces for it; done to this end, that the Portugals, being with him, should not presume to resist against him.' After losing five more men, who were eaten by sharks, Hawkins shaped his course westward with a good cargo of negroes and 'other merchandises.' 'Contrary winds and some tornados happened to us very ill. But the Almighty God, who never suffereth His elect to perish, sent us the ordinary Breeze, which never left us till we came to an island of the Cannibals' (Caribs of Dominica), who, by the by, had just eaten a shipload of Spaniards.

Hawkins found the Spanish officials determined to make a show of resisting unauthorized trade. But when 'he prepared 100 men well armed with bows, arrows, arquebuses, and pikes, with which he marched townwards,' the officials let the sale

of blacks go on. Hawkins was particularly anxious to get rid of his 'lean negroes,' who might die in his hands and become a dead loss; so he used the 'gunboat argument' to good effect. Sparke kept his eyes open for side-shows and was delighted with the alligators, which he called crocodiles, perhaps for the sake of the crocodile tears. 'His nature is to cry and sob like a Christian to provoke his prey to come to him; and thereupon came this proverb, that is applied unto women when they weep, *lachrymæ crocodili.*'

From the West Indies Hawkins made for Florida, which was then an object of exceptional desire among adventurous Englishmen. De Soto, one of Pizarro's lieutenants, had annexed it to Spain and, in 1539, had started off inland to discover the supposed Peru of North America. Three years later he had died while descending the valley of the Mississippi. Six years later again, the first Spanish missionary in Florida 'taking upon him to persuade the people to subjection, was by them taken, and his skin cruelly pulled over his ears, and his flesh eaten.' Hawkins's men had fair warning on the way; for 'they, being ashore, found a dead man, dried in a manner whole, with other heads and bodies of men,' apparently smoked

like hams. 'But to return to our purpose,' adds the indefatigable Sparke, 'the captain in the ship's pinnace sailed along the shore and went into every creek, speaking with divers of the *Floridians*, because he would understand where the Frenchmen inhabited.' Finally he found them 'in the river of *May* [now St. John's River] and standing in 30 degrees and better.' There was 'great store of maize and mill, and grapes of great bigness. Also deer great plenty, which came upon the sands before them.'

So here were the three rivals overlapping again — the annexing Spaniards, the would-be colonizing French, and the persistently trading English. There were, however, no Spaniards about at that time. This was the second Huguenot colony in Florida. René de Laudonnière had founded it in 1564. The first one, founded two years earlier by Jean Ribaut, had failed and Ribaut's men had deserted the place. They had started for home in 1563, had suffered terrible hardships, had been picked up by an English vessel, and taken, some to France and some to England, where the court was all agog about the wealth of Florida. People said there were mines so bright with jewels that they had to be approached at night lest the flash-

ing light should strike men blind. Florida became proverbial; and Elizabethan wits made endless fun of it. *Stolida*, or the land of fools, and *Sordida*, or the land of muck-worms, were some of their *jeux d'esprit*. Everyone was 'bound for Florida,' whether he meant to go there or not, despite Spanish spheres of influence, the native cannibals, and pirates by the way.

Hawkins, on the contrary, did not profess to be bound for Florida. Nevertheless he arrived there, and probably had intended to do so from the first, for he took with him a Frenchman who had been in Ribaut's colony two years before, and Sparke significantly says that 'the land is more than any [one] king Christian is able to inhabit.' However this may be, Hawkins found the second French colony as well as 'a French ship of fourscore ton, and two pinnaces of fifteen ton apiece by her . . . and a fort, in which their captain Monsieur Laudonnière was, with certain soldiers therein.' The colony had not been a success. Nor is this to be wondered at when we remember that most of the 'certain soldiers' were ex-pirates, who wanted gold, and 'who would not take the pains so much as to fish in the river before their doors, but would have all things put in their

mouths.' Eighty of the original two hundred 'went a-roving' to the West Indies, 'where they spoiled the Spaniards . . . and were of such haughty stomachs that they thought their force to be such that no man durst meddle with them. . . . But God . . . did indurate their hearts in such sort that they lingered so long that a [Spanish] ship and galliasse being made out of St. Domingo . . . took twenty of them, whereof the most part were hanged . . . and twenty-five escaped . . . to Florida, where . . . they were put into prison [by Laudonnière, against whom they had mutinied] and . . . four of the chiefest being condemned, at the request of the soldiers did pass the arquebusers, and then were hanged upon a gibbet.' Sparke got the delightful expression 'at the request of the soldiers did pass the arquebusers' from a 'very polite' Frenchman. Could any one tell you more politely, in mistranslated language, how to stand up and be shot?

Sparke was greatly taken with the unknown art of smoking. 'The Floridians . . . have an herb dried, who, with a cane and an earthen cup in the end, with fire and the dried herbs put together, do suck through the cane the smoke thereof, which smoke satisfieth their hunger,

and therewith they live four or five days without meat or drink. And this all the Frenchmen used for this purpose; yet do they hold opinion withal that it causeth water and steam to void from their stomachs.' The other 'commodities of the land' were 'more than are yet known to any man.' But Hawkins was bent on trade, not colonizing. He sold the *Tiger*, a barque of fifty tons, to Laudonnière for seven hundred crowns and sailed north on the first voyage ever made along the coast of the United States by an all-English crew. Turning east off Newfoundland 'with a good large wind, the 20 September [1565] we came to Padstow, in Cornwall, God be thanked! in safety, with the loss of twenty persons in all the voyage, and with great profit to the venturers, as also to the whole realm, in bringing home both gold, silver, pearls, and other jewels great store. His name, therefore, be praised for evermore. Amen.'

Hawkins was now a rich man, a favorite at court, and quite the rage in London. The Queen was very gracious and granted him the well-known coat of arms with the crest of 'a demi-Moor, bound and captive' in honor of the great new English slave trade. The Spanish ambassador met him at court and asked him to dinner,

where, over the wine, Hawkins assured him that he was going out again next year. Meanwhile, however, the famous Captain-General of the Indian trade, Don Pedro Menendez de Aviles, the best naval officer that Spain perhaps has ever had, swooped down on the French in Florida, killed them all, and built the fort of St. Augustine to guard the 'Mountains of Bright Stones' somewhere in the hinterland. News of this slaughter soon arrived at Madrid, whence orders presently went out to have an eye on Hawkins, whom Spanish officials thenceforth regarded as the leading interloper in New Spain.

Nevertheless Hawkins set out on his third and very 'troublesome' voyage in 1567, backed by all his old and many new supporters, and with a flotilla of six vessels, the *Jesus*, the *Minion* (which then meant darling), the *William and John*, the *Judith*, the *Angel*, and the *Swallow*. This was the voyage that began those twenty years of sea-dog fighting which rose to their zenith in the battle against the Armada; and with this voyage Drake himself steps on to the stage as captain of the *Judith*.

There had been a hitch in 1566, for the Spanish ambassador had reported Hawkins's after-dinner

speech to his king. Philip had protested to Elizabeth, and Elizabeth had consulted with Cecil, afterwards 'the great Lord Burleigh,' ancestor of the Marquis of Salisbury, British Prime Minister during the Spanish-American War of 1898. The result was that orders went down to Plymouth stopping Hawkins and binding him over, in a bond of five hundred pounds, to keep the peace with Her Majesty's right good friend King Philip of Spain. But in 1567 times had changed again, and Hawkins sailed with colors flying, for Elizabeth was now as ready to hurt Philip as he was to hurt her, provided always that open war was carefully avoided.

But this time things went wrong from the first. A tremendous autumnal storm scattered the ships. Then the first negroes that Hawkins tried to 'snare' proved to be like that other kind of prey of which the sarcastic Frenchman wrote: 'This animal is very wicked; when you attack it, it defends itself.' The 'envenomed arrows' of the negroes worked the mischief. 'There hardly escaped any that had blood drawn of them, but died in strange sort, with their mouths shut some ten days before they died.' Hawkins himself was wounded, but, 'thanks be to God,' escaped

the lockjaw. After this the English took sides in a native war and captured '250 persons, men, women, and children,' while their friend the King captured '600 prisoners, whereof we hoped to have had our choice. But the negro, in which nation is seldom or never found truth, that night removed his camp and prisoners, so that we were fain to content ourselves with those few we had gotten ourselves.'

However, with 'between 400 and 500 negroes,' Hawkins crossed over from Africa to the West Indies and 'coasted from place to place, making our traffic with the Spaniards as we might, somewhat hardly, because the King had straitly commanded all his governors by no means to suffer any trade to be made with us. Notwithstanding, we had reasonable trade, and courteous entertainment' for a good part of the way. In Rio de la Hacha the Spaniards received the English with a volley that killed a couple of men, whereupon the English smashed in the gates, while the Spaniards retired. But, after this little bit of punctilio, trade went on under cover of night so briskly that two hundred negroes were sold at good prices. From there to Cartagena 'the inhabitants were glad of us and traded

willingly,' supply being short and demand extra high.

Then came a real rebuff from the governor of Cartagena, followed by a terrific storm 'which so beat the *Jesus* that we cut down all her higher buildings' (deck superstructures). Then the course was shaped for Florida. But a new storm drove the battered flotilla back to 'the port which serveth the city of Mexico, called St. John de Ulua,' the modern Vera Cruz. The historic Vera Cruz was fifteen miles north of this harbor. Here 'thinking us to be the fleet of Spain, the chief officers of the country came aboard us. Which, being deceived of their expectation, were greatly dismayed; but . . . when they saw our demand was nothing but victuals, were recomforted. I [for it is Hawkins's own story] found in the same port 12 ships which had in them by report £200,000 in gold and silver, all which, being in my possession [*i. e.*, at my mercy] with the King's Island . . . I set at liberty.'

What was to be done? Hawkins had a hundred negroes still to sell. But it was four hundred miles to Mexico City and back again; and a new Spanish viceroy was aboard the big Spanish fleet that was daily expected to arrive in this very

port. If a permit to sell came back from the capital in time, well and good. If no more than time to replenish stores was allowed, good enough, despite the loss of sales. But what if the Spanish fleet arrived? The 'King's Island' was a low little reef right in the mouth of the harbor, which it all but barred. Moreover, no vessel could live through a northerly gale inside the harbor — the only one on that coast — unless securely moored to the island itself. Consequently whoever held the island commanded the situation altogether.

There was not much time for consultation; for the very next morning 'we saw open of the haven 13 great ships, the fleet of Spain.' It was a terrible predicament. '*Now*, said I, *I am in two dangers, and forced to receive the one of them.* . . . Either I must have kept out the fleet, which, with God's help, I was very well able to do, or else suffer them to enter with their accustomed treason. . . . If I had kept them out, then there had been present shipwreck of all that fleet, which amounted in value to six millions, which was in value of our money £1,800,000, which I considered I was not able to answer, fearing the Queen's Majesty's indignation. . . . Thus with

myself revolving the doubts, I thought better to abide the jut of the uncertainty than of the certainty.' So, after conditions had been agreed upon and hostages exchanged, the thirteen Spanish ships sailed in. The little island remained in English hands; and the Spaniards were profuse in promises.

But, having secretly made their preparations, the Spaniards, who were in overwhelming numbers, suddenly set upon the English by land and sea. Every Englishman ashore was killed, except a few who got off in a boat to the *Jesus*. The *Jesus* and the *Minion* cut their headfasts, hauled clear by their sternfasts, drove back the boarding parties, and engaged the Spanish fleet at about a hundred yards. Within an hour the Spanish flagship and another were sunk, a third vessel was burning furiously, fore and aft, while every English deck was clear of enemies. But the Spaniards had swarmed on to the island from all sides and were firing into the English hulls at only a few feet from the cannon's mouth. Hawkins was cool as ever. Calling for a tankard of beer he drank to the health of the gunners, who accounted for most of the five hundred and forty men killed on the Spanish side. 'Stand by your

ordnance lustily,' he cried, as he put the tankard down and a round shot sent it flying. 'God hath delivered me,' he added, 'and so will He deliver you from these traitors and villains.'

The masts of the *Jesus* went by the board and her old, strained timbers splintered, loosened up, and were stove in under the storm of cannon balls. Hawkins then gave the order to abandon ship after taking out what stores they could and changing her berth so that she would shield the little *Minion*. But while this desperate manœuvre was being executed down came two fire-ships. Some of the *Minion's* crew then lost their heads and made sail so quickly that Hawkins himself was nearly left behind.

The only two English vessels that escaped were the *Minion* and the *Judith*. When nothing else was left to do, Hawkins shouted to Drake to lay the *Judith* aboard the *Minion*, take in all the men and stores he could, and put to sea. Drake, then only twenty-three, did this with consummate skill. Hawkins followed some time after and anchored just out of range. But Drake had already gained an offing that caused the two little vessels to part company in the night, during which a whole gale from the north sprang up, threatening

to put the *Judith* on a lee shore. Drake therefore fought his way to windward; and, seeing no one when the gale abated, and having barely enough stores to make a friendly land, sailed straight home. Hawkins reported the *Judith*, without mentioning Drake's name, as 'forsaking' the *Minion*. But no other witness thought Drake to blame.

Hawkins himself rode out the gale under the lee of a little island, then beat about for two weeks of increasing misery, when 'hides were thought very good meat, and rats, cats, mice, and dogs, parrots and monkeys that were got at great price, none escaped.' The *Minion* was of three hundred tons; and so was insufferably overcrowded with three hundred men, two hundred English and one hundred negroes. Drake's little *Judith*, of only fifty tons, could have given no relief, as she was herself overfull. Hawkins asked all the men who preferred to take their chance on land to get round the foremast and all those who wanted to remain afloat to get round the mizzen. About a hundred chose one course and a hundred the other. The landing took place about a hundred and fifty miles south of the Rio Grande. The shore party nearly all died. But three lived to

write of their adventures. David Ingram, following Indian trails all round the Gulf of Mexico and up the Atlantic seaboard, came out where St. John, New Brunswick, stands now, was picked up by a passing Frenchman, and so got safely home. Job Hortop and Miles Philips were caught by the Spaniards and sent back to Mexico. Philips escaped to England fourteen years later. But Hortop was sent to Spain, where he served twelve years as a galley-slave and ten as a servant before he contrived to get aboard an English vessel.

The ten Spanish hostages were found safe and sound aboard the *Jesus;* though, by all the rules of war, Hawkins would have been amply justified in killing them. The English hostages were kept fast prisoners. 'If all the miseries of this sorrowful voyage,' says Hawkins's report, 'should be perfectly written, there should need a painful man with his pen, and as great a time as he had that wrote the lives and deaths of martyrs.'

Thus, in complete disaster, ended that third voyage to New Spain on which so many hopes were set. And with this disastrous end began those twenty years of sea-dog rage which found their satisfaction against the Great Armada.

CHAPTER VI

DRAKE'S BEGINNING

We must now turn back for a moment to 1545, the year in which the Old World, after the discovery of the mines of Potosi, first awoke to the illimitable riches of the New; the year in which King Henry assembled his epoch-making fleet; the year, too, in which the British National Anthem was, so to say, born at sea, when the parole throughout the waiting fleet was *God save the King!* and the answering countersign was *Long to reign over us!*

In the same year, at Crowndale by Tavistock in Devon, was born Francis Drake, greatest of sea-dogs and first of modern admirals. His father, Edmund Drake, was a skipper in modest circumstances. But from time immemorial there had been Drakes all round the countryside of Tavistock and the family name stood high. Francis was called after his godfather, Francis

Russell, son and heir of Henry's right-hand reforming peer, Lord Russell, progenitor of the Dukes of Bedford down to the present day.

Though fortune thus seemed to smile upon Drake's cradle, his boyhood proved to be a very stormy one indeed. He was not yet five when the Protestant zeal of the Lord Protector Somerset stirred the Roman Catholics of the West Country into an insurrection that swept the anti-Papal minority before it like flotsam before a flood. Drake's father was a zealous Protestant, a 'hot gospeller,' much given to preaching; and when he was cast up by the storm on what is now Drake's Island, just off Plymouth, he was glad to take passage for Kent. His friends at court then made him a sort of naval chaplain to the men who took care of His Majesty's ships laid up in Gillingham Reach on the River Medway, just below where Chatham Dockyard stands to-day. Here, in a vessel too old for service, most of Drake's eleven brothers were born to a life as nearly amphibious as the life of any boy could be. The tide runs in with a rush from the sea at Sheerness, only ten miles away; and so, among the creeks and marshes, points and bends, through tortuous channels and hurrying waters lashed by the keen

east wind of England, Drake reveled in the kind of playground that a sea-dog's son should have.

During the reign of Mary (1553–58) 'hot gospellers' like Drake's father were of course turned out of the Service. And so young Francis had to be apprenticed to 'the master of a bark, which he used to coast along the shore, and sometimes to carry merchandise into Zeeland and France.' It was hard work and a rough life for the little lad of ten. But Drake stuck to it, and 'so pleased the old man by his industry that, being a bachelor, at his death he bequeathed his bark unto him by will and testament.' Moreover, after Elizabeth's accession, Drake's father came into his own. He took orders in the Church of England, and in 1561, when Francis was sixteen, became vicar of Upchurch on the Medway, the same river on which his boys had learned to live amphibious lives.

No dreams of any Golden West had Drake as yet. To the boy in his teens *Westward Ho!* meant nothing more than the usual cry of London boatmen touting for fares up-stream. But, before he went out with Sir John Hawkins, on the 'troublesome' voyage which we have just followed, he must have had a foretaste of some-

thing like his future raiding of the Spanish Main; for the Channel swarmed with Protestant privateers, no gentler, when they caught a Spaniard, than Spaniards were when they caught them. He was twenty-two when he went out with Hawkins and would be in his twenty-fourth year when he returned to England in the little *Judith* after the murderous Spanish treachery at San Juan de Ulua.

Just as the winter night was closing in, on the 20th of January, 1569, the *Judith* sailed into Plymouth. Drake landed. William Hawkins, John's brother, wrote a petition to the Queen-in-Council for letters-of-marque in reprisal for Ulua, and Drake dashed off for London with the missive almost before the ink was dry. Now it happened that a Spanish treasure fleet, carrying money from Italy and bound for Antwerp, had been driven into Plymouth and neighboring ports by Huguenot privateers. This money was urgently needed by Alva, the very capable but ruthless governor of the Spanish Netherlands, who, having just drowned the rebellious Dutch in blood, was now erecting a colossal statue to himself for having 'extinguished sedition, chastised rebellion,

restored religion, secured justice, and established peace.' The Spanish ambassador therefore obtained leave to bring it overland to Dover.

But no sooner had Elizabeth signed the order of safe conduct than in came Drake with the news of San Juan de Ulua. Elizabeth at once saw that all the English sea-dogs would be flaming for revenge. Everyone saw that the treasure would be safer now in England than aboard any Spanish vessel in the Channel. So, on the ground that the gold, though payable to Philip's representative in Antwerp, was still the property of the Italian bankers who advanced it, Elizabeth sent orders down post-haste to commandeer it. The enraged ambassador advised Alva to seize everything English in the Netherlands. Elizabeth in turn seized everything Spanish in England. Elizabeth now held the diplomatic trumps; for existing treaties provided that there should be no reprisals without a reasonable delay; and Alva had seized English property before giving Elizabeth the customary time to explain.

John Hawkins entered Plymouth five days later than Drake and started for London with four pack horses carrying all he had saved from the wreck. By the irony of fate he travelled up

to town in the rear of the long procession that carried the commandeered Spanish gold.

The plot thickened fast; for England was now on the brink of war with France over the secret aid Englishmen had been giving to the Huguenots at La Rochelle. But suddenly Elizabeth was all smiles and affability for France. And when her two great merchant fleets put out to sea, one, the wine-fleet, bound for La Rochelle, went with only a small naval escort, just enough to keep the pirates off; while the other, the big wool-fleet, usually sent to Antwerp but now bound for Hamburg, went with a strong fighting escort of regular men-of-war.

Aboard this escort went Francis Drake as a lieutenant in the Royal Navy. Home in June, Drake ran down to Tavistock in Devon; wooed, won, and married pretty Mary Newman, all within a month. He was back on duty in July.

For the time being the war cloud passed away. Elizabeth's tortuous diplomacy had succeeded, owing to dissension among her enemies. In the following year (1570) the international situation was changed by the Pope, who issued a bull formally deposing Elizabeth and absolving her subjects from their allegiance to her. The French

and Spanish monarchs refused to publish this order because they did not approve of deposition by the Pope. But, for all that, it worked against Elizabeth by making her the official standing enemy of Rome. At the same time it worked for her among the sea-dogs and all who thought with them. 'The case,' said Thomas Fuller, author of *The Worthies of England*, 'the case was clear in *sea divinitie*.' Religious zeal and commercial enterprise went hand in hand. The case *was* clear; and the English navy, now mobilized and ready for war, made it much clearer still.

Westward Ho! in chief command, at the age of twenty-five, with the tiny flotilla of the *Dragon* and the *Swan*, manned by as good a lot of dare-devil experts as any privateer could wish to see! Out and back in 1570, and again in 1571, Drake took reprisals on New Spain, made money for all hands engaged, and gained a knowledge of the American coast that stood him in good stead for future expeditions.

It was 1572 when Drake, at the age of twenty-seven, sailed out of Plymouth on the Nombre de Dios expedition that brought him into fame. He led a Lilliputian fleet: the *Pascha* and the

Swan, a hundred tons between them, with seventy-three men, all ranks and ratings, aboard of them. But both vessels were 'richly furnished with victuals and apparels for a whole year, and no less heedfully provided with all manner of ammunition, artillery [which then meant every kind of firearm as well as cannon], artificers' stuff and tools; but especially three dainty pinnaces made in Plymouth, taken asunder all in pieces,' and stowed aboard to be set up as occasion served.

Without once striking sail Drake made the channel between Dominica and Martinique in twenty-five days and arrived off a previously chosen secret harbor on the Spanish Main towards the end of July. To his intense surprise a column of smoke was rising from it, though there was no settlement within a hundred miles. On landing he found a leaden plate with this inscription: 'Captain Drake! If you fortune to come to this Port, make hast away! For the Spaniards which you had with you here, the last year, have bewrayed the place and taken away all that you left here. I depart hence, this present 7th of July, 1572. Your very loving friend, John Garrett.' That was fourteen days before. Drake, however, was determined to carry out his plan.

So he built a fort and set up his pinnaces. But others had now found the secret harbor; for in came three sail under Ranse, an Englishman, who asked that he be taken into partnership, which was done.

Then the combined forces, not much over a hundred strong, stole out and along the coast to the Isle of Pines, where again Drake found himself forestalled. From the negro crews of two Spanish vessels he discovered that, only six weeks earlier, the Maroons had annihilated a Spanish force on the Isthmus and nearly taken Nombre de Dios itself. These Maroons were the descendants of escaped negro slaves intermarried with the most warlike of the Indians. They were regular desperadoes, always, and naturally, at war with the Spaniards, who treated them as vermin to be killed at sight. Drake put the captured negroes ashore to join the Maroons, with whom he always made friends. Then with seventy-three picked men he made his dash for Nombre de Dios, leaving the rest under Ranse to guard the base.

Nombre de Dios was the Atlantic terminus, as Panama was the Pacific terminus, of the treasure trail across the Isthmus of Darien. The Spaniards,

knowing nothing of Cape Horn, and unable to face the appalling dangers of Magellan's straits, used to bring the Peruvian treasure ships to Panama, whence the treasure was taken across the isthmus to Nombre de Dios by *recuas*, that is, by mule trains under escort.

At evening Drake's vessel stood off the harbor of Nombre de Dios and stealthily approached unseen. It was planned to make the landing in the morning. A long and nerve-racking wait ensued. As the hours dragged on, Drake felt instinctively that his younger men were getting demoralized. They began to whisper about the size of the town — 'as big as Plymouth' — with perhaps a whole battalion of the famous Spanish infantry, and so on. It wanted an hour of the first real streak of dawn. But just then the old moon sent a ray of light quivering in on the tide. Drake instantly announced the dawn, issued the orders: 'Shove off, out oars, give way!' Inside the bay a ship just arrived from sea was picking up her moorings. A boat left her side and pulled like mad for the wharf. But Drake's men raced the Spaniards, beat them, and made them sheer off to a landing some way beyond the town.

Springing eagerly ashore the Englishmen

tumbled the Spanish guns off their platforms while the astonished sentry ran for dear life. In five minutes the church bells were pealing out their wild alarms, trumpet calls were sounding, drums were beating round the general parade, and the civilians of the place, expecting massacre at the hands of the Maroons, were rushing about in agonized confusion. Drake's men fell in — they were all well-drilled — and were quickly told off into three detachments. The largest under Drake, the next under Oxenham — the hero of Kingsley's *Westward Ho!* — and the third, of twelve men only, to guard the pinnaces. Having found that the new fort on the hill commanding the town was not yet occupied, Drake and Oxenham marched against the town at the head of their sixty men, Oxenham by a flank, Drake straight up the main street, each with a trumpet sounding, a drum rolling, fire-pikes blazing, swords flashing, and all ranks yelling like fiends. Drake was only of medium stature. But he had the strength of a giant, the pluck of a bulldog, the spring of a tiger, and the cut of a man that is born to command. Broad-browed, with steel-blue eyes and close-cropped auburn hair and beard, he was all kindliness of countenance to

friends, but a very 'Dragon' to his Spanish foes.

As Drake's men reached the Plaza, his trumpeter blew one blast of defiance and then fell dead. Drake returned the Spanish volley and charged immediately, the drummer beating furiously, pikes levelled, and swords brandished. The Spaniards did not wait for him to close; for Oxenham's party, fire-pikes blazing, were taking them in flank. Out went the Spaniards through the Panama gate, with screaming townsfolk scurrying before them. Bang went the gate, now under English guard, as Drake made for the Governor's house. There lay a pile of silver bars such as his men had never dreamt of: in all, about four hundred tons of silver ready for the homeward fleet — enough not only to fill but sink the *Pascha*, *Swan*, and pinnaces. But silver was then no more to Drake than it was once to Solomon. What he wanted were the diamonds and pearls and gold, which were stored, he learned, in the King's Treasure House beside the bay.

A terrific storm now burst. The fire-pikes and arquebuses had to be taken under cover. The wall of the King's Treasure House defied all efforts to breach it. And the Spaniards who had

been shut into the town, discovering how few the English were, reformed for attack. Some of Drake's men began to lose heart. But in a moment he stepped to the front and ordered Oxenham to go round and smash in the Treasure House gate while he held the Plaza himself. Just as the men stepped off, however, he reeled aside and fell. He had fainted from loss of blood caused by a wound he had managed to conceal. There was no holding the men now. They gave him a cordial, after which he bound up his leg, for he was a first-rate surgeon, and repeated his orders as before. But there were a good many wounded; and, with Drake no longer able to lead, the rest all begged to go back. So back to their boats they went, and over to the Bastimentos or Victualling Islands, which contained the gardens and poultry runs of the Nombre de Dios citizens.

Here they were visited, under a flag of truce, by the Spanish officer commanding the reinforcement just sent across from Panama. He was all politeness, airs, and graces, while trying to ferret out the secret of their real strength. Drake, however, was not to be outdone either in diplomacy or war; and a delightful little comedy of

prying and veiling courtesies was played out, to the great amusement of the English sea-dogs. Finally, when the time agreed upon was up, the Spanish officer departed, pouring forth a stream of high-flown compliments, which Drake, who was a Spanish scholar, answered with the like. Waving each other a ceremonious adieu the two leaders were left no wiser than before.

Nombre de Dios, now strongly reinforced and on its guard, was not an easy nut to crack. But Panama? Panama meant a risky march inland and a still riskier return by the regular treasure trail. But with the help of the Maroons, who knew the furtive byways to a foot, the thing might yet be done. Ranse thought the game not worth the candle and retired from the partnership, much to Drake's delight.

A good preliminary stroke was made by raiding Cartagena. Here Drake found a frigate deserted by its crew, who had gone ashore to see fair play in a duel fought about a seaman's mistress. The old man left in charge confessed that a Seville ship was round the point. Drake cut her out at once, in spite of being fired at from the shore. Next, in came two more Spanish sail to warn Cartagena that 'Captain Drake has been

at Nombre de Dios and taken it, and if a blest bullet hadn't hit him in the leg he would have sacked it too.'

Cartagena, however, was up in arms already; so Drake put all his prisoners ashore unhurt and retired to reconsider his position, leaving Diego, a negro fugitive from Nombre de Dios, to muster the Maroons for a raid overland to Panama. Then Drake, who sank the *Swan* and burnt his prizes because he had only men enough for the *Pascha* and the pinnaces, disappeared into a new secret harbor. But his troubles were only beginning; for word came that the Maroons said that nothing could be done inland till the rains were over, five months hence. This meant a long wait; however, what with making supply depots and picking up prizes here and there, the wet time might pass off well enough.

One day Oxenham's crew nearly mutinied over the shortness of provisions. 'Have ye not as much as I,' Drake called to them, 'and has God's Providence ever failed us yet?' Within an hour a Spanish vessel hove in sight, making such very heavy weather of it that boarding her was out of the question. But 'We spent not two hours in attendance till it pleased God to send us a reason-

able calm, so that we might use our guns and approach her at pleasure. We found her laden with victuals, which we received as sent of God's great mercy.' Then 'Yellow Jack' broke out, and the men began to fall sick and die. The company consisted of seventy-three men; and twenty-eight of these perished of the fever, among them the surgeon himself and Drake's own brother.

But on the 3d of February, 1573, Drake was ready for the dash on Panama. Leaving behind about twenty-five men to guard the base, he began the overland march with a company of fifty, all told, of whom thirty-one were picked Maroons. The fourth day out Drake climbed a forest giant on the top of the Divide, saw the Atlantic behind him and the Pacific far in front, and vowed that if he lived he would sail an English ship over the great South Sea. Two days more and the party left the protecting forest for the rolling pampas where the risk of being seen increased at every step. Another day's march and Panama was sighted as they topped the crest of one of the bigger waves of ground. A clever Maroon went ahead to spy out the situation and returned to say that two *recuas* would leave at dusk, one

coming from Venta Cruz, fifteen miles northwest of Panama, carrying silver and supplies, and the other from Panama, loaded with jewels and gold. Then a Spanish sentry was caught asleep by the advanced party of Maroons, who smelt him out by the match of his fire-lock. In his gratitude for being protected from the Maroons, this man confirmed the previous information.

The excitement now was most intense; for the crowning triumph of a two-years' great adventure was at last within striking distance of the English crew. Drake drew them up in proper order; and every man took off his shirt and put it on again outside his coat, so that each would recognize the others in the night attack. Then they lay listening for the mule-bells, till presently the warning tinkle let them know that *recuas* were approaching from both Venta Cruz and Panama. The first, or silver train from Venta Cruz, was to pass in silence; only the second, or gold train from Panama, was to be attacked. Unluckily one of the Englishmen had been secretly taking pulls at his flask and had just become pot-valiant when a stray Spanish gentleman came riding up from Venta Cruz. The Englishman sprang to his feet, swayed about, was tripped up

by Maroons and promptly sat upon. But the Spaniard saw his shirt, reined up, whipped round, and galloped back to Panama. This took place so silently at the extreme flank in towards Panama that it was not observed by Drake or any other Englishman. Presently what appeared to be the gold train came within range. Drake blew his whistle; and all set on with glee, only to find that the Panama *recua* they were attacking was a decoy sent on to spring the trap and that the gold and jewels had been stopped.

The Spaniards were up in arms. But Drake slipped away through the engulfing forest and came out on the Atlantic side, where he found his rear-guard intact and eager for further exploits. He was met by Captain Têtu, a Huguenot just out from France, with seventy men. Têtu gave Drake news of the Massacre of St. Bartholomew, and this drew the French and English Protestants together. They agreed to engage in further raiding of Spaniards, share and share alike by nationalities, though Drake had now only thirty-one men against Têtu's seventy. Nombre de Dios, they decided, was not vulnerable, as all the available Spanish forces were concentrated there for its defence, and so they planned to seize

a Spanish train of gold and jewels just far enough inland to give them time to get away with the plunder before the garrison could reach them. Somewhere on the coast they established a base of operations and then marched overland to the Panama trail and lay in wait.

This time the marauders were successful. When the Spanish train of gold and jewels came opposite the ambush, Drake's whistle blew. The leading mules were stopped. The rest lay down, as mule-trains will. The guard was overpowered after killing a Maroon and wounding Captain Têtu. And when the garrison of Nombre de Dios arrived a few hours later the gold and jewels had all gone.

For a day and a night and another day Drake and his men pushed on, loaded with plunder, back to their rendezvous along the coast, leaving Têtu and two of his devoted Frenchmen to be rescued later. When they arrived, worn out, at the rendezvous, not a man was in sight. Drake built a raft out of unhewn tree trunks and, setting up a biscuit bag as a sail, pushed out with two Frenchmen and one Englishman till he found his boats. The plunder was then divided up between the French and the English, while Oxenham headed

a rescue party to bring Têtu to the coast. One Frenchman was found. But Têtu and the other had been caught by Spaniards.

The *Pascha* was given to the accumulated Spanish prisoners to sail away in. The pinnaces were kept till a suitable, smart-sailing Spanish craft was found, boarded, and captured to replace them; whereupon they were broken up and their metal given to the Maroons. Then, in two frigates, with ballast of silver and cargo of jewels and gold, the thirty survivors of the adventure set sail for home. 'Within 23 days we passed from the Cape of Florida to the Isles of Scilly, and so arrived at Plymouth on Sunday about sermon time, August 9, 1573, at what time the news of our Captain's return, brought unto his friends, did so speedily pass over all the church, and surpass their minds with desire to see him, that very few or none remained with the preacher, all hastening to see the evidence of God's love and blessing towards our Gracious Queen and country, by the fruit of our Captain's labour and success. *Soli Deo Gloria.*'

CHAPTER VII

DRAKE'S 'ENCOMPASSMENT OF ALL THE WORLDE'

When Drake left for Nombre de Dios in the spring of 1572, Spain and England were both ready to fly at each other's throats. When he came back in the summer of 1573, they were all for making friends — hypocritically so, but friends. Drake's plunder stank in the nostrils of the haughty Dons. It was a very inconvenient factor in the diplomatic problem for Elizabeth. Therefore Drake disappeared and his plunder too. He went to Ireland on service in the navy. His plunder was divided up in secrecy among all the high and low contracting parties.

In 1574 the Anglo-Spanish scene had changed again. The Spaniards had been so harassed by the English sea-dogs between the Netherlands and Spain that Philip listened to his great admiral, Menendez, who, despairing of direct attack on England, proposed to seize the Scilly Isles and

from that naval base clear out a way through all the pirates of the English Channel. War seemed certain. But a terrible epidemic broke out in the Spanish fleet. Menendez died. And Philip changed his policy again.

This same year John Oxenham, Drake's old second-in-command, sailed over to his death. The Spaniards caught him on the Isthmus of Darien and hanged him as a pirate at Lima in Peru.

In the autumn of 1575 Drake returned to England with a new friend, Thomas Doughty, a soldier-scholar of the Renaissance, clever and good company, but one of those 'Italianate' Englishmen who gave rise to the Italian proverb: *Inglese italianato è diavolo incarnato* — 'an Italianized Englishman is the very Devil.' Doughty was patronized by the Earl of Essex, who had great influence at court.

The next year, 1576, is noted for the 'Spanish Fury.' Philip's sea power was so hampered by the Dutch and English privateers, and he was so impotent against the English navy, that he could get no ready money, either by loan or from America, to pay his troops in Antwerp. These men, reinforced by others, therefore mutinied and sacked

the whole of Antwerp, killing all who opposed them and practically ruining the city from which Charles V used to draw such splendid subsidies. The result was a strengthening of Dutch resistance everywhere.

Elizabeth had been unusually tortuous in her policy about this time. But in 1577 she was ready for another shot at Spain, provided always that it entailed no open war. Don John of Austria, natural son of Charles V, had all the shining qualities that his legitimate half-brother Philip lacked. He was the hero of Lepanto and had offered to conquer the Moors in Tunis if Philip would let him rule as king. Philip, crafty, cold, and jealous, of course refused and sent him to the Netherlands instead. Here Don John formed the still more aspiring plan of pacifying the Dutch, marrying Mary Queen of Scots, deposing Elizabeth, and reigning over all the British Isles. The Pope had blessed both schemes. But the Dutch insisted on the immediate withdrawal of the Spanish troops. This demolished Don John's plan. But it pleased Philip, who could now ruin his brilliant brother by letting him wear himself out by trying to govern the Netherlands without an army. Then the Duke of Anjou, brother to

the King of France, came into the fast-thickening plot at the head of the French rescuers of the Netherlands from Spain. But a victorious French army in the Netherlands was worse for England than even Spanish rule there. So Elizabeth tried to support the Dutch enough to annoy Philip and at the same time keep them independent of the French.

In her desire to support them against Philip indirectly she found it convenient to call Drake into consultation. Drake then presented to Sir Francis Walsingham his letter of commendation from the Earl of Essex, under whom he had served in Ireland; whereupon 'Secretary Walsingham [the first civilian who ever grasped the principle of modern sea power] declared that Her Majesty had received divers injuries of the King of Spain, for which she desired revenge. He showed me a plot [map] willing me to note down where he might be most annoyed. But I refused to set my hand to anything, affirming that Her Majesty was mortal, and that if it should please God to take Her Majesty away that some prince might reign that might be in league with the King of Spain, and then would my own hand be a witness against myself.' Elizabeth was forty-four. Mary

Queen of Scots was watching for the throne. Plots and counter-plots were everywhere.

Shortly after this interview Drake was told late at night that he should have audience of Her Majesty next day. On seeing him, Elizabeth went straight to the point. 'Drake, I would gladly be revenged on the King of Spain for divers injuries that I have received.' 'And withal,' says Drake, 'craved my advice therein; who told Her Majesty the only way was to annoy him by the Indies.' On that he disclosed his whole daring scheme for raiding the Pacific. Elizabeth, who, like her father, 'loved a man' who was a man, fell in with this at once. Secrecy was of course essential. 'Her Majesty did swear by her Crown that if any within her realm did give the King of Spain to understand hereof they should lose their heads therefor.' At a subsequent audience 'Her Majesty gave me special commandment that of all men my Lord Treasurer should not know of it.' The cautious Lord Treasurer Burleigh was against what he considered dangerous forms of privateering and was for keeping on good terms with Spanish arms and trade as long as possible. Mendoza, lynx-eyed ambassador of Spain, was hoodwinked. But

Doughty, the viper in Drake's bosom, was meditating mischief: not exactly treason with Spain, but at least a breach of confidence by telling Burleigh.

De Guaras, chief Spanish spy in England, was sorely puzzled. Drake's ostensible destination was Egypt, and his men were openly enlisted for Alexandria. The Spaniards, however, saw far enough through this to suppose that he was really going back to Nombre de Dios. It did not seem likely, though quite possible, that he was going in search of the Northwest Passage, for Martin Frobisher had gone out on that quest the year before and had returned with a lump of black stone from the arctic desolation of Baffin Island. No one seems to have divined the truth. Cape Horn was unknown. The Strait of Magellan was supposed to be the only opening between South America and a huge antarctic continent, and its reputation for disasters had grown so terrible, and rightly terrible, that it had been given up as the way into the Pacific. The Spanish way, as we have seen, was overland from Nombre de Dios to Panama, more or less along the line of the modern Panama Canal.

In the end Drake got away quietly enough,

on the 15th of November, 1577. The court and country were in great excitement over the conspiracy between the Spaniards and Mary Queen of Scots, now a prisoner of nine years' standing.

'THE FAMOUS VOYAGE OF SIR FRANCIS DRAKE *into the South Sea, and therehence about the whole Globe of the Earth, begun in the year of our Lord 1577*' well deserves its great renown. Drake's flotilla seems absurdly small. But, for its own time, it was far from insignificant; and it was exceedingly well found. The *Pelican*, afterwards called the *Golden Hind*, though his flagship, was of only a hundred tons. The *Elizabeth*, the *Swan*, the *Marigold*, and the *Benedict* were of eighty, fifty, thirty, and fifteen. There were altogether less than three hundred tons and two hundred men. The crews numbered a hundred and fifty. The rest were gentlemen-adventurers, special artificers, two trained surveyors, musicians, boys, and Drake's own page, Jack Drake. There was 'great store of wild-fire, chain-shot, harquebusses, pistols, corslets, bows and other like weapons in great abundance. Neither had he omitted to make provision for ornament and delight, carrying with him expert musicians, rich furniture

(all the vessels for his table, yea, many belonging even to the cook-room, being of pure silver), and divers shows of all sorts of curious workmanship whereby the civility and magnificence of his native country might amongst all nations withersoever he should come, be the more admired.'[1]

[1] The little handbook issued by Pette and Jackman in 1580, for those whom we should now call commercial travellers, is full of 'tips' about 'Thinges to be carried with you, whereof more or lesse is to be carried for a shewe of our commodities to bee made.' For instance:—'Kersies of all orient coulours, specially of stamel [fine worsted], brode cloth of orient coulours also. Taffeta hats. Deepe cappes for mariners. Quilted Cappes of Levant Taffeta of divers coulours, for the night. Garters of Silke. Girdels of Buffe and all leathers, with gilt and ungilt Buckles, specially wast girdels. Wast girdels of velvet. Gloves of all sortes, knit and of leather. Gloves perfumed. Shooes of Spanish leather, of divers colours. Looking glasses for Women, great and fayre. Combs of Ivorie. Handkerchewes, with silk of divers colours, wrought. Glasen eyes to ride with against dust [so motor goggles are not so new, after all!]. Boxes with weightes of golde, and every kind of coyne of golde, to shewe that the people here use weight and measure, which is a certayne showe of wisedome, and of a certayne government settled here.'

There are also elaborate directions about what to take 'For banketing on shipborde of persons of credite' [and prospective customers]. 'First, the sweetest perfumes to set under hatches to make the place smell sweete against their coming aborde. Marmelade. Sucket [candies]. Figges barrelled. Raisins of the Sun. Comfets that shall not dissolve. Prunes damaske. Dried peres. Walnuttes. Almondes. Olives, to make them taste their wine. The Apple John that dureth two yeares, to make showe of our fruites. Hullocke [a sweet wine]. Sacke. Vials of good sweet waters, and casting-bottels of glass, to besprinckel the gests withal, after their coming aborde. The sweet oyle of Zante and excellent French vinegar and a fine kind of Bisket steeped in the same do make a banketting dishe,

Sou'sou'west went Drake's flotilla and made its landfall 'towards the Pole Antartick' off the 'Land of Devils' in 31° 40′ south, northeast of Montevideo. Frightful storms had buffeted the little ships about for weary weeks together, and all hands thought they were the victims of some magician on board, perhaps the 'Italianate' Doughty, or else of native witchcraft from the shore. The experienced old pilot, who was a Portuguese, explained that the natives had sold themselves to Devils, who were kinder masters than the Spaniards, and that 'now when they see ships they cast sand into the air, whereof ariseth a most gross thick fogg and palpable

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and a little Sugar cast in it cooleth and comforteth, and refresheth the spirittes of man. Synomomme Water and Imperiall Water is to be had with you to comfort your sicke in the voyage.'

No feature is neglected. 'Take with you the large mappe of London and let the river be drawn full of shippes to make the more showe of your great trade. The booke of the Attyre of All Nations carried with you and bestowed in gift would be much esteemed. Tinder boxes, with steel, flint, and matches. A painted Bellowes, for perhaps they have not the use of them. All manner of edge tools. Note specially what dyeing they use.' After many more items the authors end up with two bits of good advice. 'Take with you those things that bee in the Perfection of Goodnesse to make your commodities in credit in time to come.' 'Learn what the Country hath before you offer your commodities for sale; for if you bring thither what you yourself desire to lade yourself home with, you must not sell yours deare lest hereafter you purchase theirs not so cheape as you would.'

darkness, and withal horrible, fearful, and intolerable winds, rains, and storms.'

But witchcraft was not Thomas Doughty's real offence. Even before leaving England, and after betraying Elizabeth and Drake to Burleigh, who wished to curry favor with the Spanish traders rather than provoke the Spanish power, Doughty was busy tampering with the men. A storekeeper had to be sent back for peculation designed to curtail Drake's range of action. Then Doughty tempted officers and men: talked up the terrors of Magellan's Strait, ran down his friend's authority, and finally tried to encourage downright desertion by underhand means. This was too much for Drake. Doughty was arrested, tied to the mast, and threatened with dire punishment if he did not mend his ways. But he would not mend his ways. He had a brother on board and a friend, a 'very craftie lawyer'; so stern measures were soon required. Drake held a sort of court-martial which condemned Doughty to death. Then Doughty, having played his last card and lost, determined to die 'like an officer and gentleman.'

Drake solemnly 'pronounced him the child of Death and persuaded him that he would by these

means make him the servant of God.' Doughty fell in with the idea and the former friends took the Sacrament together, 'for which Master Doughty gave him hearty thanks, never otherwise terming him than "My good Captaine."' Chaplain Fletcher having ended with the absolution, Drake and Doughty sat down together 'as cheerfully as ever in their lives, each cheering up the other and taking their leave by drinking to each other, as if some journey had been in hand.' Then Drake and Doughty went aside for a private conversation of which no record has remained. After this Doughty walked to the place of execution, where, like King Charles I,

> He nothing common did or mean
> Upon that memorable scene.

'And so bidding the whole company farewell he laid his head on the block.' 'Lo! this is the end of traitors!' said Drake as the executioner raised the head aloft.

Drake, like Magellan, decided to winter where he was, in Port St. Julian on the east coast of Patagonia. His troubles with the men were not yet over; for the soldiers resented being put on

an equality with the sailors, and the 'very craftie lawyer' and Doughty's brother were anything but pleased with the turn events had taken. Then, again, the faint-hearts murmured in their storm-beaten tents against the horrors of the awful Straits. So Drake resolved to make things clear for good and all. Unfolding a document he began: 'My Masters, I am a very bad orator, for my bringing up hath not been in learning, but what I shall speak here let every man take good notice of and let him write it down; for I will speak nothing but I will answer it in England, yea, and before Her Majesty, and I have it here already set down.' Then, after reminding them of the great adventure before them and saying that mutiny and dissension must stop at once, he went on: 'For by the life of God it doth even take my wits from me to think of it. Here is such controversy between the gentlemen and sailors that it doth make me mad to hear it. I must have the gentleman to haul with the mariner and the mariner with the gentleman. I would know him that would refuse to set his hand to a rope! But I know there is not any such here.' To those whose hearts failed them he offered the *Marigold*. 'But let them go homeward;

for if I find them in my way, I will surely sink them.' Not a man stepped forward. Then, turning to the officers, he discharged every one of them for re-appointment at his pleasure. Next, he made the worst offenders, the 'craftie lawyer' included, step to the front for reprimand. Finally, producing the Queen's commission, he ended by a ringing appeal to their united patriotism. 'We have set by the ears three mighty Princes [the sovereigns of England, Spain, and Portugal]; and if this voyage should not have success we should not only be a scorning unto our enemies but a blot on our country for ever. What triumph would it not be for Spain and Portugal! The like of this would never more be tried.' Then he gave back every man his rank again, explaining that he and they were all servants of Her Majesty together. With this the men marched off, loyal and obedient, to their tents.

Next week Drake sailed for the much dreaded Straits, before entering which he changed the *Pelican's* name to the *Golden Hind*, which was the crest of Sir Christopher Hatton, one of the chief promoters of the enterprise and also one of Doughty's patrons. Then every vessel struck her topsail to the bunt in honor of the Queen as well as to

show that all discoveries and captures were to be made in her sole name. Seventeen days of appalling dangers saw them through the Straits, where icy squalls came rushing down from every quarter of the baffling channels. But the Pacific was still worse. For no less than fifty-two consecutive days a furious gale kept driving them about like so many bits of driftwood. 'The like of it no traveller hath felt, neither hath there ever been such a tempest since Noah's flood.' The little English vessels fought for their very lives in that devouring hell of waters, the loneliest and most stupendous in the world. The *Marigold* went down with all hands, and Parson Fletcher, who heard their dying call, thought it was a judgment. At last the gale abated near Cape Horn, where Drake landed with a compass, while Parson Fletcher set up a stone engraved with the Queen's name and the date of the discovery.

Deceived by the false trend of the coast shown on the Spanish charts Drake went a long way northwest from Cape Horn. Then he struck in northeast and picked up the Chilean Islands. It was December, 1578; but not a word of warning had reached the Spanish Pacific when Drake stood in to Valparaiso. Seeing a sail, the crew

of the *Grand Captain of the South* got up a cask of wine and beat a welcome on their drums. In the twinkling of an eye gigantic Tom Moone was over the side at the head of a party of boarders who laid about them with a will and soon drove the Spaniards below. Half a million dollars' worth of gold and jewels was taken with this prize.

Drake then found a place in Salado Bay where he could clean the *Golden Hind* while the pinnace ranged south to look for the other ships that had parted company during the two months' storm. These were never found, the *Elizabeth* and the *Swan* having gone home after parting company in the storm that sank the *Marigold*. After a prolonged search the *Golden Hind* stood north again. Meanwhile the astounding news of her arrival was spreading dismay all over the coast, where the old Spanish governor's plans were totally upset. The Indians had just been defeated when this strange ship came sailing in from nowhere, to the utter confusion of their enemies. The governor died of vexation, and all the Spanish authorities were nearly worried to death. They had never dreamt of such an invasion. Their crews were small, their lumbering

vessels very lightly armed, their towns unfortified.

But Drake went faster by sea than their news by land. Every vessel was overhauled, taken, searched, emptied of its treasure, and then sent back with its crew and passengers at liberty. One day a watering party chanced upon a Spaniard from Potosi fast asleep with thirteen bars of silver by him. The bars were lifted quietly and the Spaniard left sleeping peacefully. Another Spaniard suddenly came round a corner with half a ton of silver on eight llamas. The Indians came off to trade; and Drake, as usual, made friends with them at once. He had already been attacked by other Indians on both coasts. But this was because the unknown English had been mistaken for the hated Spaniards.

As he neared Lima, Drake quickened his pace lest the great annual treasure ship of 1579 should get wind of what was wrong. A minor treasure ship was found to have been cleared of all her silver just in time to balk him. So he set every stitch of canvas she possessed and left her driving out to sea with two other empty prizes. Then he stole into Lima after dark and came to anchor surrounded by Spanish vessels not one of which

had set a watch. They were found nearly empty. But a ship from Panama looked promising; so the pinnace started after her, but was fired on and an Englishman was killed. Drake then followed her, after cutting every cable in the harbor, which soon became a pandemonium of vessels gone adrift. The Panama ship had nothing of great value except her news, which was that the great treasure ship *Nuestra Señora de la Concepcion*, 'the chiefest glory of the whole South Sea,' was on her way to Panama.

She had a very long start; and, as ill luck would have it, Drake got becalmed outside Callao, where the bells rang out in wild alarm. The news had spread inland and the Viceroy of Peru came hurrying down with all the troops that he could muster. Finding from some arrows that the strangers were Englishmen, he put four hundred soldiers into the only two vessels that had escaped the general wreck produced by Drake's cutting of the cables. When Drake saw the two pursuing craft, he took back his prize crew from the Panama vessel, into which he put his prisoners. Meanwhile a breeze sprang up and he soon drew far ahead. The Spanish soldiers overhauled the Panama prize and gladly gave up the pursuit.

They had no guns of any size with which to fight the *Golden Hind;* and most of them were so sea-sick from the heaving ground-swell that they couldn't have boarded her in any case.

Three more prizes were then taken by the swift *Golden Hind.* Each one had news which showed that Drake was closing on the chase. Another week passed with every stitch of canvas set. A fourth prize, taken off Cape San Francisco, said that the treasure ship was only one day ahead. But she was getting near to Panama; so every nerve was strained anew. Presently Jack Drake, the Captain's page, yelled out *Sail-ho!* and scrambled down the mainmast to get the golden chain that Drake had promised to the first lookout who saw the chase. It was ticklish work, so near to Panama; and local winds might ruin all. So Drake, in order not to frighten her, trailed a dozen big empty wine jars over the stern to moderate his pace. At eight o'clock the jars were cut adrift and the *Golden Hind* sprang forward with the evening breeze, her crew at battle quarters and her decks all cleared for action. The chase was called the 'Spitfire' by the Spaniards because she was much better armed than any other vessel there. But, all the same, her

armament was nothing for her tonnage. The Spaniards trusted to their remoteness for protection; and that was their undoing.

To every Englishman's amazement the chase was seen to go about and calmly come to hail the *Golden Hind*, which she mistook for a despatch vessel sent after her with some message from the Viceroy! Drake, asking nothing better, ran up alongside as Anton her captain hailed him with a *Who are you? A ship of Chili!* answered Drake. Anton looked down on the stranger's deck to see it full of armed men from whom a roar of triumph came. *English! strike sail!* Then Drake's whistle blew sharply and instant silence followed; on which he hailed Don Anton: — *Strike sail! Señor Juan de Anton, or I must send you to the bottom! —Come aboard and do it yourself!* bravely answered Anton. Drake's whistle blew one shrill long blast, which loosed a withering volley at less than point-blank range. Anton tried to bear away and shake off his assailant. But in vain. The English guns now opened on his masts and rigging. Down came the mizzen, while a hail of English shot and arrows prevented every attempt to clear away the wreckage. The dumbfounded Spanish crew ran below. Don Anton looked

overside to port; and there was the English pinnace, from which forty English boarders were nimbly climbing up his own ship's side. Resistance was hopeless; so Anton struck and was taken aboard the *Golden Hind*. There he met Drake, who was already taking off his armor. 'Accept with patience the usage of war,' said Drake, laying his hand on Anton's shoulder.

For all that night, next day, and the next night following Drake sailed west with his fabulous prize so as to get well clear of the trade route along the coast. What the whole treasure was has never been revealed. But it certainly amounted to the equivalent of many millions at the present day. Among the official items were: 13 chests of pieces of eight, 80 lbs. of pure gold, jewels and plate, 26 ton weight of silver, and sundries unspecified. As the Spanish pilot's son looked over the rail at this astounding sight, the Englishmen called out to say that his father was no longer the pilot of the old Spit-*fire* but of the new Spit-*silver*.

The prisoners were no less gratified than surprised by Drake's kind treatment. He entertained Don Anton at a banquet, took him all over the *Golden Hind*, and entrusted him with a message to Don Martin, the traitor of San Juan de

Ulua. This was to say that if Don Martin hanged any more Englishmen, as he had just hanged Oxenham, he should soon be given a present of two thousand Spanish heads. Then Drake gave every Spanish officer and man a personal gift proportioned to his rank, put all his accumulated prisoners aboard the emptied treasure ship, wished them a prosperous voyage and better luck next time, furnished the brave Don Anton with a letter of protection in case he should fall in with an English vessel, and, after many expressions of goodwill on both sides, sailed north, the voyage 'made'; while the poor 'spit-silver' treasure ship turned sadly east and steered for Panama.

Lima, Panama, and Nombre de Dios were in wild commotion at the news; and every sailor and soldier that the Spaniards had was going to and fro, uncertain whether to attack or to defend, and still more distracted as to the most elusive English whereabouts. One good Spanish captain, Don Pedro Sarmiento de Gamboa, was all for going north, his instinct telling him that Drake would not come back among the angry bees after stealing all the honey. But, by the time the Captain-General of New Spain had made up his

mind to take one of the many wrong directions he had been thinking of, Drake was already far on his way north to found New Albion.

Drake's triumph over all difficulties had won the hearts of his men more than ever before, while the capture of the treasure ship had done nothing to loosen the bonds of discipline. Don Francisco de Zarate wrote a very intimate account of his experience as a prisoner on board the *Golden Hind*. 'The English captain is one of the greatest mariners at sea, alike from his skill and his powers of command. His ship is a very fast sailer and her men are all skilled hands of warlike age and so well trained that they might be old soldiers of the Italian tertias,' the crack corps of the age in Spanish eyes. 'He is served with much plate and has all possible kinds of delicacies and scents, many of which he says the Queen of England gave him. None of the gentlemen sit or cover in his presence without first being ordered to do so. They dine and sup to the music of violins. His galleon carries about thirty guns and a great deal of ammunition.' This was in marked contrast to the common Spanish practice, even on the Atlantic side. The greedy exploiters of New Spain grudged every ton of armament

and every well-trained fighting sailor, both on account of the expense and because this form of protection took up room they wished to fill with merchandise. The result was, of course, that they lost more by capture than they gained by evading the regulation about the proper armament. 'His ship is not only of the very latest type but sheathed.' Before copper sheathing was invented some generations later, the Teredo worm used to honeycomb unprotected hulls in the most dangerous way. John Hawkins invented the sheathing used by Drake: a good thick tar-and-hair sheeting clamped on with elm.

Northwest to Coronado, then to Aguatulco, then fifteen hundred miles due west, brought Drake about that distance west-by-south of the modern San Francisco. Here he turned east-north-east and, giving the land a wide berth, went on to perhaps the latitude of Vancouver Island, always looking for the reverse way through America by the fabled Northwest Passage. Either there was the most extraordinary June ever known in California and Oregon, or else the narratives of those on board have all been hopelessly confused, for freezing rain is said to have fallen on the night of June the 3d in the latitude of 42°.

In 48° 'there followed most vile, thick, and stinking fogs' with still more numbing cold. The meat froze when taken off the fire. The wet rigging turned to icicles. Six men could hardly do the work of three. Fresh from the tropics, the crews were unfit for going any farther. A tremendous nor'wester settled the question, anyway; and Drake ran south to 38° 30′, where, in what is now Drake's Bay, he came to anchor just north of San Francisco.

Not more than once, if ever at all, and that a generation earlier, had Europeans been in northern California. The Indians took the Englishmen for gods whom they knew not whether to love or fear. Drake with the essential kindliness of most, and the magnetic power of all, great born commanders, soon won the natives' confidence. But their admiration 'as men ravished in their minds' was rather overpowering; for, after 'a kind of most lamentable weeping and crying out,' they came forward with various offerings for the new-found gods, prostrating themselves in humble adoration and tearing their breasts and faces in a wild desire to show the spirit of self-sacrifice. Drake and his men, all Protestants, were horrified at being made what they considered idols. So,

kneeling down, they prayed aloud, raising hands and eyes to Heaven, hoping thereby to show the heathen where the true God lived. Drake then read the Bible and all the Englishmen sang Psalms, the Indians, 'observing the end of every pause, with one voice still cried *Oh!* greatly rejoicing in our exercises.' As this impromptu service ended the Indians gave back all the presents Drake had given them and retired in attitudes of adoration.

In three days more they returned, headed by a Medicine-man, whom the English called the 'mace-bearer.' With the slow and stately measure of a mystic dance this great high priest of heathen rites advanced chanting a sort of litany. Both litany and dance were gradually taken up by tens, by hundreds, and finally by all the thousands of the devotees, who addressed Drake with shouts of *Hyoh!* and invested him with a headdress of rare plumage and a necklace of quaint beads. It was, in fact, a native coronation without a soul to doubt the divine right of their new king. Drake's Protestant scruples were quieted by thinking 'to what good end God had brought this to pass, and what honour and profit it might bring to our country in time to come. So, in

the name and to the use of her most excellent Majesty, he took the sceptre, crown, and dignity' and proclaimed an English protectorate over the land he called New Albion. He then set up a brass plate commemorating this proclamation, and put an English coin in the middle so that the Indians might see Elizabeth's portrait and armorial device.

The exaltation of the ecstatic devotees continued till the day he left. They crowded in to be cured by the touch of his hand — those were the times in which the sovereign was expected to cure the King's Evil by a touch. They also expected to be cured by inhaling the divine breath of any one among the English gods. The chief narrator adds that the gods who pleased the Indians most, braves and squaws included, 'were commonly the youngest of us,' which shows that the human was not quite forgotten in the all-divine. When the time for sailing came, the devotees were inconsolable. 'They not only in a sudden did lose all mirth, joy, glad countenance, pleasant speeches, agility of body, and all pleasure, but, with sighs and sorrowings, they poured out woefull complayntes and moans with bitter tears, and wringing of their hands, and tormenting of

themselves.' The last the English saw of them was the whole devoted tribe assembled on the hill around a sacrificial fire, whence they implored their gods to bring their heaven back to earth.

From California Drake sailed to the Philippines; and then to the Moluccas, where the Portuguese had, if such a thing were possible, outdone even the Spaniards in their fiendish dealings with the natives. Lopez de Mosquito—viler than his pestilential name — had murdered the Sultan, who was then his guest, chopped up the body, and thrown it into the sea. Baber, the Sultan's son, had driven out the Portuguese from the island of Ternate and was preparing to do likewise from the island of Tidore, when Drake arrived. Baber then offered Drake, for Queen Elizabeth, the complete monopoly of the trade in spices if only Drake would use the *Golden Hind* as the flagship against the Portuguese. Drake's reception was full of Oriental state; and Sultan Baber was so entranced by Drake's musicians that he sat all afternoon among them in a boat towed by the *Golden Hind*. But it was too great a risk to take a hand in this new war with only fifty-six men left. So Drake traded for all the spices he

could stow away and concluded a sort of understanding which formed the sheet anchor of English diplomacy in Eastern seas for another century to come. Elizabeth was so delighted with this result that she gave Drake a cup (still at the family seat of Nutwell Court in Devonshire) engraved with a picture of his reception by the Sultan Baber of Ternate.

Leaving Ternate, the *Golden Hind* beat to and fro among the tortuous and only half-known channels of the Archipelago till the 9th of January, 1580, when she bore away before a roaring trade wind with all sail set and, so far as Drake could tell, a good clear course for home. But suddenly, without a moment's warning, there was a most terrific shock. The gallant ship reared like a stricken charger, plunged forward, grinding her trembling hull against the rocks, and then lay pounding out her life upon a reef. Drake and his men at once took in half the straining sails; then knelt in prayer; then rose to see what could be done by earthly means. To their dismay there was no holding ground on which to get an anchor fast and warp the vessel off. The lead could find no bottom anywhere aft. All night long the *Golden Hind* remained fast caught

in this insidious death-trap. At dawn Parson Fletcher preached a sermon and administered the Blessed Sacrament. Then Drake ordered ten tons overboard — cannon, cloves, and provisions. The tide was now low and she sewed seven feet, her draught being thirteen and the depth of water only six. Still she kept an even keel as the reef was to leeward and she had just sail enough to hold her up. But at high tide in the afternoon there was a lull and she began to heel over towards the unfathomable depths. Just then, however, a quiver ran through her from stem to stern; an extra sail that Drake had ordered up caught what little wind there was; and, with the last throb of the rising tide, she shook herself free and took the water as quietly as if her hull was being launched. There were perils enough to follow: dangers of navigation, the arrival of a Portuguese fleet that was only just eluded, and all the ordinary risks of travel in times when what might be called the official guide to voyagers opened with the ominous advice, *First make thy Will.* But the greatest had now been safely passed.

Meanwhile all sorts of rumors were rife in Spain, New Spain, and England. Drake had been

hanged. That rumor came from the hanging of John Oxenham at Lima. The *Golden Hind* had foundered. That tale was what Winter, captain of the *Elizabeth*, was not altogether unwilling should be thought after his own failure to face another great antarctic storm. He had returned in 1578. News from Peru and Mexico came home in 1579; but no Drake. So, as 1580 wore on, his friends began to despair, the Spaniards and Portuguese rejoiced, while Burleigh, with all who found Drake an inconvenience in their diplomatic way, began to hope that perhaps the sea had smoothed things over. In August the London merchants were thrown into consternation by the report of Drake's incredible captures; for their own merchant fleet was just then off for Spain. They waited on the Council, who soothed them with the assurance that Drake's voyage was a purely private venture so far as prizes were concerned. With this diplomatic quibble they were forced to be content.

But worse was soon to follow. The king of Portugal died. Philip's army marched on Lisbon immediately, and all the Portuguese possessions were added to the already overgrown empire of Spain. Worse still, this annexation gave Philip

what he wanted in the way of ships; for Portugal had more than Spain. The Great Armada was now expected to be formed against England, unless Elizabeth's miraculous diplomacy could once more get her clear of the fast-entangling coils. To add to the general confusion, this was also the year in which the Pope sent his picked Jesuits to England, and in which Elizabeth was carrying on her last great international flirtation with ugly, dissipated Francis of Anjou, brother to the king of France.

Into this imbroglio sailed the *Golden Hind* with ballast of silver and cargo of gold. 'Is Her Majesty alive and well?' said Drake to the first sail outside of Plymouth Sound. 'Ay, ay, she is, my Master,' answered the skipper of a fishing smack, 'but there's a deal o' sickness here in Plymouth'; on which Drake, ready for any excuse to stay afloat, came to anchor in the harbor. His wife, pretty Mary Newman from the banks of Tavy, took boat to see him, as did the Mayor, whose business was to warn him to keep quiet till his course was clear. So Drake wrote off to the Queen and all the Councillors who were on his side. The answer from the Councillors was not encouraging; so he warped out quietly and

anchored again behind Drake's Island in the Sound. But presently the Queen's own message came, commanding him to an audience at which, she said, she would be pleased to view some of the curiosities he had brought from foreign parts. Straight on that hint he started up to town with spices, diamonds, pearls, and gold enough to win any woman's pardon and consent.

The audience lasted six hours. Meanwhile the Council sat without any of Drake's supporters and ordered all the treasure to be impounded in the Tower. But Leicester, Walsingham, and Hatton, all members of Drake's syndicate, refused to sign; while Elizabeth herself, the managing director, suspended the order till her further pleasure should be known. The Spanish ambassador 'did burn with passion against Drake.' The Council was distractingly divided. The London merchants trembled for their fleet. But Elizabeth was determined that the blow to Philip should hurt him as much as it could without producing an immediate war; while down among Drake's own West-Countrymen 'the case was clear in sea divinitie,' as similar cases had often been before. Tremayne, a Devonshire magistrate and friend of the syndicate, could hardly find words to express

his contentment with Drake, whom he called 'a man of great government, and that by the rules of God and His Book.'

Elizabeth decided to stand by Drake. She claimed, what was true, that he had injured no actual place or person of the King of Spain's, nothing but property afloat, appropriate for reprisals. All England knew the story of Ulua and approved of reprisals in accordance with the spirit of the age. And the Queen had a special grievance about Ireland, where the Spaniards were entrenched in Smerwick, thus adding to the confusion of a rebellion that never quite died down at any time. Philip explained that the Smerwick Spaniards were there as private volunteers. Elizabeth answered that Drake was just the same. The English tide, at all events, was turning in his favor. The indefatigable Stowe, chronicler of London, records that 'the people generally applauded his wonderful long adventures and rich prizes. His name and fame became admirable in all places, the people swarming daily in the streets to behold him, vowing hatred to all that misliked him.'

The *Golden Hind* had been brought round to London, where she was the greatest attraction

of the day. Finally, on the 4th of April, 1581, Elizabeth went on board in state, to a banquet 'finer than has ever been seen in England since King Henry VIII,' said the furious Spanish ambassador in his report to Philip. But this was not her chief offence in Spanish eyes. For here, surrounded by her court, and in the presence of an enormous multitude of her enthusiastic subjects, she openly defied the King of Spain. 'He hath demanded Drake's head of me,' she laughed aloud, 'and here I have a gilded sword to strike it off.' With that she bade Drake kneel. Then, handing the sword to Marchaumont, the special envoy of her French suitor, Francis of Anjou, she ordered him to give the accolade. This done, she pronounced the formula of immemorial fame: *I bid thee rise, Sir Francis Drake!*

CHAPTER VIII

DRAKE CLIPS THE WINGS OF SPAIN

For three years after Drake had been dubbed Sir Francis by the Queen he was the hero of every class of Englishmen but two: the extreme Roman Catholics, who wanted Mary Queen of Scots, and the merchants who were doing business with Portugal and Spain. The Marian opposition to the general policy of England persisted for a few years longer. But the merchants who were the inheritors of centuries of commercial intercourse with England's new enemies were soon to receive a shock that completely changed their minds. They were themselves one of the strongest factors that made for war in the knotty problem now to be solved at the cannon's mouth because English trade was seeking new outlets in every direction and was beating hard against every door that foreigners shut in its face. These merchants would not, however, support the war party till they were forced to, as they

still hoped to gain by other means what only war could win.

The year that Drake came home (1580) Philip at last got hold of a sea-going fleet, the eleven big Portuguese galleons taken when Lisbon fell. With the Portuguese ships, sailors, and oversea possessions, with more galleons under construction at Santander in Spain, and with the galleons of the Indian Guard built by the great Menendez to protect New Spain: with all this performed or promised, Philip began to feel as if the hour was at hand when he could do to England what she had done to him.

In 1583 Santa Cruz, the best Spanish admiral since the death of Menendez, proposed to form the nucleus of the Great Armada out of the fleet with which he had just broken down the last vestige of Portuguese resistance in the Azores. From that day on, the idea was never dropped. At the same time Elizabeth discovered the Paris Plot between Mary and Philip and the Catholics of France, all of whom were bent on her destruction. England stood to arms. But false ideas of naval defence were uppermost in the Queen's Council. No attempt was made to strike a concentrated blow at the heart of the enemy's fleet in his own waters. Instead of

this the English ships were carefully divided among the three squadrons meant to defend the approaches to England, Ireland, and Scotland, because, as the Queen-in-Council sagely remarked, who could be expected to know what the enemy's point of attack would be? The fact is that when wielding the forces of the fleet and army the Queen and most of her non-combatant councillors never quite reached that supreme point of view from which the greatest statesmen see exactly where civil control ends and civilian interference begins. Luckily for England, their mistakes were once more covered up by a turn of the international kaleidoscope.

No sooner had the immediate danger of a great combined attack on England passed away than Elizabeth returned to Drake's plan for a regular raid against New Spain, though it had to be one that was not designed to bring on war in Europe. Drake, who was a member of the Navy Board charged with the reorganization of the fleet, was to have command. The ships and men were ready. But the time had not yet come.

Next year (1584) Amadas and Barlow, Sir Walter Raleigh's two prospectors for the 'plantation' of Virginia, were being delighted with the

summer lands and waters of what is now North Carolina. We shall soon hear more of Raleigh and his vision of the West. But at this time a good many important events were happening in Europe; and it is these that we must follow first.

William of Orange, the Washington of Holland, was assassinated at Philip's instigation, while plots to kill Elizabeth and place Mary on the throne began to multiply. The agents were executed, while a 'Bond of Association' was signed by all Elizabeth's chief supporters, binding them to hunt down and kill all who tried to kill her—a plain hint for Mary Queen of Scots to stop plotting or stand the consequences.

But the merchants trading with Spain and Portugal were more than ever for keeping on good terms with Philip because the failure of the Spanish harvest had induced him to offer them special protection and encouragement if they would supply his country's needs at once. Every available ton of shipping was accordingly taken up for Spain. The English merchant fleet went out, and big profits seemed assured. But presently the *Primrose*, 'a tall ship of London,' came flying home to say that Philip had suddenly seized the merchandise, imprisoned the men, and taken the ships

and guns for use with the Great Armada. That was the last straw. The peaceful traders now saw that they were wrong and that the fighting ones were right; and for the first time both could rejoice over the clever trick by which John Hawkins had got his own again from Philip. In 1571, three years after Don Martin's treachery at San Juan de Ulua, Hawkins, while commanding the Scilly Island squadron, led the Spanish ambassador to believe that he would go over to the Spanish cause in Ireland if his claims for damages were only paid in full and all his surviving men in Mexico were sent home. The cold and crafty Philip swallowed this tempting bait; sent the men home with Spanish dollars in their pockets, and paid Hawkins forty thousand pounds, the worth of about two million dollars now. Then Hawkins used the information he had picked up behind the Spanish scenes to unravel the Ridolfi Plot for putting Mary on the throne in 1572, the year of St. Bartholomew. No wonder Philip hated sea-dogs!

Things new and old having reached this pass, the whole of England, bar the Marians, were eager for the great 'Indies Voyage' of 1585. Londoners crowded down to Woolwich 'with great jolitie' to see off their own contingent on its way

to join Drake's flag at Plymouth. Very probably Shakespeare went down too, for that famous London merchantman, the *Tiger*, to which he twice alludes—once in *Macbeth* and once in *Twelfth Night*—was off with this contingent. Such a private fleet had never yet been seen: twenty-one ships, eight smart pinnaces, and twenty-three hundred men of every rank and rating. The Queen was principal shareholder and managing director. But, as usual in colonial attacks intended for disavowal if necessity arose, no prospectus or other document was published, nor were the shareholders of this joint-stock company known in any quite official way. It was the size of the fleet and the reputation of the officers that made it a national affair. Drake, now forty, was 'Admiral'; Frobisher, of North-West-Passage fame, was 'Vice'; Knollys, the Queen's own cousin, 'Rear.' Carleill, a famous general, commanded the troops and sailed in Shakespeare's *Tiger*. Drake's old crew from the *Golden Hind* came forward to a man, among them Wright, 'that excellent mathematician and ingineer,' and big Tom Moone, the lion of all boarding-parties, each in command of a ship.

But Elizabeth was just then weaving the threads

of an unusually intricate diplomatic pattern; so doubts and delays, orders and counter-orders vexed Drake to the last. Sir Philip Sidney, too, came down as a volunteer; which was another sore vexation, since his European fame would have made him practically joint commander of the fleet, although he was not a naval officer at all. But he had the good sense to go back; whereupon Drake, fearing further interruptions from the court, ordered everything to be tumbled into the nearest ships and hurried off to sea under a press of sail.

The first port of call was Vigo in the north-western corner of Spain, where Drake's envoy told the astonished governor that Elizabeth wanted to know what Philip intended doing about embargoes now. If the governor wanted peace, he must listen to Drake's arguments; if war — well, Drake was ready to begin at once. A three-days' storm interrupted the proceedings; after which the English intercepted the fugitive townsfolk whose flight showed that the governor meant to make a stand, though he had said the embargo had been lifted and that all the English prisoners were at liberty to go. Some English sailors, however, were still being held; so Drake sent in an armed

party and brought them off, with a good pile of reprisal booty too. Then he put to sea and made for the Spanish Main by way of the Portuguese African islands.

The plan of campaign drawn up for Burleigh's information still exists. It shows that Drake, the consummate raider, was also an admiral of the highest kind. The items, showing how long each part should take and what loot each place should yield, are exact and interesting. But it is in the relation of every part to every other part and to the whole that the original genius of the born commander shines forth in all its glory. After taking San Domingo he was to sack Margarita, La Hacha, and Santa Marta, razing their fortifications as he left. Cartagena and Nombre de Dios came next. Then Carleill was to raid Panama, with the help of the Maroons, while Drake himself was to raid the coast of Honduras. Finally, with reunited forces, he would take Havana and, if possible, hold it by leaving a sufficient garrison behind. Thus he would paralyze New Spain by destroying all the points of junction along its lines of communication just when Philip stood most in need of its help for completing the Great Armada.

But, like a mettlesome steeplechaser, Drake took

a leap in his stride during the preliminary canter before the great race. The wind being foul for the Canaries, he went on to the Cape Verde archipelago and captured Santiago, which had been abandoned in terror on the approach of the English 'Dragon,' that sinister hero of Lope de Vega's epic onslaught *La Dragontea*. As good luck would have it, Carleill marched in on the anniversary of the Queen's accession, the 17th of November. So there was a royal salute fired in Her Majesty's honor by land and sea. No treasure was found. French privateers had sacked the place three years before and had killed off everyone they caught; the Portuguese, therefore, were not going to wait to meet the English 'Dragon' too. The force that marched inland failed to unearth the governor. So San Domingo, Santiago, and Porto Praya were all burnt to the ground before the fleet bore away for the West Indies.

San Domingo in Hispaniola (Hayti) was made in due course, but only after a virulent epidemic had seriously thinned the ranks. San Domingo was the oldest town in New Spain and was strongly garrisoned and fortified. But Carleill's soldiers carried all before them. Drake battered down the seaward walls. The Spaniards abandoned the citadel at night, and the English took the whole

place as a New Year's gift for 1586. But again there was no treasure. The Spaniards had killed off the Caribs in war or in the mines, so that nothing was now dug out. Moreover the citizens were quite on their guard against adventurers and ready to hide what they had in the most inaccessible places. Drake then put the town up to ransom and sent out his own Maroon boy servant to bring in the message from the Spanish officer proposing terms. This Spaniard, hating all Maroons, ran his lance through the boy and cantered away. The boy came back with the last ounce of his strength and fell dead at Drake's feet. Drake sent to say he would hang two Spaniards every day if the murderer was not hanged by his own compatriots. As no one came he began with two friars. Then the Spaniards brought in the offender and hanged him in the presence of both armies.

That episode cleared the air; and an interchange of courtesies and hospitalities immediately followed. But no business was done. Drake therefore began to burn the town bit by bit till twenty-five thousand ducats were paid. It was very little for the capital. But the men picked up a good deal of loot in the process and vented their ultra-Protestant zeal on all the 'graven images' that

were not worth keeping for sale. On the whole the English were well satisfied. They had taken all the Spanish ships and armament they wanted, destroyed the rest, liberated over a hundred brawny galley-slaves — some Turks among them — all anxious for revenge, and had struck a blow at Spanish prestige which echoed back to Europe. Spain never hid her light under a bushel; and here, in the Governor's Palace, was a huge escutcheon with a horse standing on the earth and pawing at the sky. The motto blazoned on it was to the effect that the earth itself was not enough for Spain—*Non sufficit orbis.* Drake's humor was greatly tickled, and he and his officers kept asking the Spaniards to translate the motto again and again.

Delays and tempestuous head winds induced Drake to let intermediate points alone and make straight for Cartagena on the South American mainland. Cartagena had been warned and was on the alert. It was strong by both nature and art. The garrison was good of its kind, though the Spaniards' custom of fighting in quilted jackets instead of armor put them at a disadvantage. This custom was due to the heat and to the fact that the jackets were proof against the native arrows.

There was an outer and an inner harbor, with

such an intricate and well-defended passage that no one thought Drake would dare go in. But he did. Frobisher had failed to catch a pilot. But Drake did the trick without one, to the utter dismay of the Spaniards. After some more very clever manœuvres, to distract the enemy's attention from the real point of attack, Carleill and the soldiers landed under cover of the dark and came upon the town where they were least expected, by wading waist-deep through the water just out of sight of the Spanish gunners. The entrenchments did not bar the way in this unexpected quarter. But wine casks full of rammed earth had been hurriedly piled there in case the mad English should make the attempt. Carleill gave the signal. Goring's musketeers sprang forward and fired into the Spaniards' faces. Then Sampson's pikemen charged through and a desperate hand-to-hand fight ensued. Finally the Spaniards broke after Carleill had killed their standard-bearer and Goring had wounded and taken their commander. The enemies ran pell-mell through the town together till the English reformed in the Plaza. Next day Drake moved in to attack the harbor fort; whereupon it was abandoned and the whole place fell.

But again there was a dearth of booty. The Spaniards were getting shy of keeping too many valuables where they could be taken. So negotiations, emphasized by piecemeal destruction, went on till sickness and the lateness of the season put the English in a sorry fix. The sack of the city had yielded much less than that of San Domingo; and the men, who were all volunteers, to be paid out of plunder, began to grumble at their ill-success. Many had been wounded, several killed — big, faithful Tom Moone among them. A hundred died. More were ill. Two councils of war were held, one naval, the other military. The military officers agreed to give up all their own shares to the men. But the naval officers, who were poorer and who were also responsible for the expenses of their vessels, could not concur. Finally 110,000 ducats (equivalent in purchasing power to nearly three millions of dollars) were accepted.

It was now impossible to complete the programme or even to take Havana, in view of the renewed sickness, the losses, and the advance of the season. A further disappointment was experienced when Drake just missed the treasure fleet by only half a day, though through no fault of his own. Then, with constantly diminishing

numbers of effective men, the course was shaped for the Spanish 'plantation' of St. Augustine in Florida. This place was utterly destroyed and some guns and money were taken from it. Then the fleet stood north again till, on the 9th of June, it found Raleigh's colony of Roanoke.

Ralph Lane, the governor, was in his fort on the island ready to brave it out. Drake offered a free passage home to all the colonists. But Lane preferred staying and going on with his surveys and 'plantation.' Drake then filled up a store ship to leave behind with Lane. But a terrific three-day storm wrecked the store ship and damped the colonists' enthusiasm so much that they persuaded Lane to change his mind. The colonists embarked and the fleet then bore away for home. Though balked of much it had expected in the way of booty, reduced in strength by losses, and therefore unable to garrison any strategic point which would threaten the life of New Spain, its purely naval work was a true and glorious success. When he arrived at Plymouth, Drake wrote immediately to Burleigh: 'My very good Lord, there is now a very great gap opened, very little to the liking of the King of Spain.'

This 'very great gap' on the American side of

the Atlantic was soon to be matched by the still greater gap Drake was to make on the European side by destroying the Spanish Armada and thus securing that mightiest of ocean highways through which the hosts of emigration afterwards poured into a land endowed with the goodly heritage of English liberty and the English tongue.

The year of Drake's return (1586) was no less troublous than its immediate predecessors. The discovery of the Babington Plot to assassinate Elizabeth and to place Mary on the throne, supported by Scotland, France, and Spain, proved Mary's complicity, produced an actual threat of war from France, and made the Pope and Philip gnash their teeth with rage. The Roman Catholic allied powers had no sufficient navy, and Philip's credit was at its lowest ebb after Drake's devastating raid. The English were exultant, east and west; for the *True Report of a Worthie Fight performed in the voiage from Turkie by Five Shippes of London against 11 gallies and two frigats of the King of Spain at Pantalarea, within the Straits* [of Gibraltar] *Anno 1586* was going the rounds and running a close second to Drake's West India achievement. The ignorant and thoughtless, both

then and since, mistook this fight, and another like it in 1590, to mean that English merchantmen could beat off Spanish men-of-war. Nothing of the kind: the English Levanters were heavily armed and admirably manned by well-trained fighting crews; and what these actions really proved, if proof was necessary, was that galleys were no match for broadsides from the proper kind of sailing ships.

Turkey came into the problems of 1586 in more than name, for there was a vast diplomatic scheme on foot to unite the Turks with such Portuguese as would support Antonio, the pretender to the throne of Portugal, and the rebellious Dutch against Spain, Catholic France, and Mary Stuart's Scotland. Leicester was in the Netherlands with an English army, fighting indecisively, losing Sir Philip Sidney and angering Elizabeth by accepting the governor-generalship without her leave and against her diplomacy, which, now as ever, was opposed to any definite avowal that could possibly be helped.

Meanwhile the Great Armada was working up its strength, and Drake was commissioned to weaken it as much as possible. But, on the 8th of February, 1587, before he could sail, Mary was

at last beheaded, and Elizabeth was once more entering on a tricky course of tortuous diplomacy too long by half to follow here. As the great crisis approached, it had become clearer and clearer that it was a case of kill or be killed between Elizabeth and Mary, and that England could not afford to leave Marian enemies in the rear when there might be a vast Catholic alliance in the front. But, as a sovereign, Elizabeth disliked the execution of any crowned head; as a wily woman she wanted to make the most of both sides; and as a diplomatist she would not have open war and direct operations going down to the root of the evil if devious ways would do.

So the peace party of the Council prevailed again, and Drake's orders were changed. He had been going as a lion. The peace party now tried to send him as a fox. But he stretched his instructions to their utmost limits and even defied the custom of the service by holding no council of war when deciding to swoop on Cadiz.

As they entered the harbor, the English saw sixty ships engaged in preparations for the Great Armada. Many had no sails—to keep the crews from deserting. Others were waiting for their guns to come from Italy. Ten galleys rowed out

to protect them. The weather and surroundings were perfect for these galleys. But as they came end-on in line-abreast Drake crossed their T in line-ahead with the shattering broadsides of four Queen's ships which soon sent them flying. Each galley was the upright of the T, each English sailing ship the corresponding cross-piece. Then Drake attacked the shipping and wrecked it right and left. Next morning he led the pinnaces and boats into the inner harbor, where they cut out the big galleon belonging to Santa Cruz himself, the Spanish commander-in-chief. Then the galleys got their chance again—an absolutely perfect chance, because Drake's fleet was becalmed at the very worst possible place for sailing ships and the very best possible place for the well-oared galleys. But even under these extraordinary circumstances the ships smashed the galleys up with broadside fire and sent them back to cover. Then the Spaniards towed some fire-ships out. But the English rowed for them, threw grappling irons into them, and gave them a turn that took them clear. Then, for the last time, the galleys came on, as bravely but as uselessly as ever. When Drake sailed away he left the shipping of Cadiz completely out of action for months to come, though

fifteen sail escaped destruction in the inner harbor. His own losses were quite insignificant.

The next objective was Cape St. Vincent, so famous through centuries of naval history because it is the great strategic salient thrust out into the Atlantic from the southwest corner of Europe, and thus commands the flank approaches to and from the Mediterranean, to and from the coast of Africa, and, in those days, the route to and from New Spain by way of the Azores. Here Drake had trouble with Borough, his second-in-command, a friend of cautious Burleigh and a man hide-bound in the warfare of the past—a sort of English Don. Borough objected to Drake's taking decisive action without the vote of a council of war. Remembering the terrors of Italian textbooks, he had continued to regard the galleys with much respect in the harbor of Cadiz even after Drake had broken them with ease. Finally, still clinging to the old ways of mere raids and reprisals, he stood aghast at the idea of seizing Cape St. Vincent and making it a base of operations. Drake promptly put him under arrest.

Sagres Castle, commanding the roadstead of Cape St. Vincent, was extraordinarily strong. The cliffs, on which it occupied about a hundred acres,

rose sheer two hundred feet all round except at a narrow and well defended neck only two hundred yards across. Drake led the stormers himself. While half his eight hundred men kept up a continuous fire against every Spaniard on the wall the other half rushed piles of faggots in against the oak and iron gate. Drake was foremost in this work, carrying faggots himself and applying the first match. For two hours the fight went on; when suddenly the Spaniards sounded a parley. Their commanding officer had been killed and the woodwork of the gate had taken fire. In those days a garrison that would not surrender was put to the sword when captured; so these Spaniards may well be excused. Drake willingly granted them the honors of war; and so, even to his own surprise, the castle fell without another blow. The minor forts near by at once surrendered and were destroyed, while the guns of Sagres were thrown over the cliffs and picked up by the men below. The whole neighboring coast was then swept clear of the fishing fleet which was the main source of supply used for the Great Armada.

The next objective was Lisbon, the headquarters of the Great Armada, one of the finest harbors in the world, and then the best fortified of all. Tak-

ing it was, of course, out of the question without a much larger fleet accompanied by an overwhelming army. But Drake reconnoitred to good effect, learnt wrinkles that saved him from disaster two years later, and retired after assuring himself that an Armada which could not fight him then could never get to England during the same season.

Ship fevers and all the other epidemics that dogged the old sailing fleets and scourged them like the plague never waited long. Drake was soon short-handed. To add to his troubles, Borough sailed away for home; whereupon Drake tried him and his officers by court-martial and condemned them all to death. This penalty was never carried out, for reasons we shall soon understand. Since no reinforcements came from home, Cape St. Vincent could not be held any longer. There was, however, one more stroke to make. The great East-India Spanish treasure ship was coming home; and Drake made up his mind to have her.

Off the Azores he met her coming towards him and dipping her colors again and again to ask him who he was. 'But we would put out no flag till we were within shot of her, when we hanged out flags, streamers, and pendants. Which done, we

hailed her with cannon-shot; and having shot her through divers times, she shot at us. Then we began to ply her hotly, our fly boat [lightly armed supply vessel of comparatively small size] and one of our pinnaces lying athwart her hawse [across her bows] at whom she shot and threw fire-works [incendiary missiles] but did them no hurt, in that her ordnance lay so high over them. Then she, seeing us ready to lay her aboard [range up alongside], all of our ships plying her so hotly, and resolutely determined to make short work of her, they yielded to us.' The Spaniards fought bravely, as they generally did. But they were only naval amateurs compared with the trained professional sea-dogs.

The voyage was now 'made' in the old sense of that term; for this prize was 'the greatest ship in all Portugal, richly laden, to our Happy Joy.' The relative values, then and now, are impossible to fix, because not only was one dollar the equivalent in most ways of ten dollars now but, in view of the smaller material scale on which men's lives were lived, these ten dollars might themselves be multiplied by ten, or more, without producing the same effect as the multiplied sum would now produce on international affairs. Suffice it to say

that the ship was worth nearly five million dollars of actual cash, and ten, twenty, thirty, or many more millions if present sums of money are to be considered relatively to the national incomes of those poorer days.

But better than spices, jewels, and gold were the secret documents which revealed the dazzling profits of the new East-India trade by sea. From that time on for the next twelve years the London merchants and their friends at court worked steadily for official sanction in this most promising direction. At last, on the 31st of December, 1600, the documents captured by Drake produced their result, and the East-India Company, by far the greatest corporation of its kind the world has ever seen, was granted a royal charter for exclusive trade. Drake may therefore be said not only to have set the course for the United States but to have actually discovered the route leading to the Empire of India, now peopled by three hundred million subjects of the British Crown.

So ended the famous campaign of 1587, popularly known as the singeing of King Philip's beard. Beyond a doubt it was the most consummate work of naval strategy which, up to that time, all history records.

CHAPTER IX

DRAKE AND THE SPANISH ARMADA

With 1588 the final crisis came. Philip — haughty, gloomy, and ambitious Philip, unskilled in arms, but persistent in his plans — sat in his palace at Madrid like a spider forever spinning webs that enemies tore down. Drake and the English had thrown the whole scheme of the Armada's mobilization completely out of gear. Philip's well-intentioned orders and counter-orders had made confusion worse confounded; and though the Spanish empire held half the riches of the world it felt the lack of ready money because English sea power had made it all parts and no whole for several months together. Then, when mobilization was resumed, Philip found himself distracted by expert advice from Santa Cruz, his admiral, and from Parma, Alva's successor in the Netherlands.

The general idea was to send the Invincible

Armada up the English Channel as far as the Netherlands, where Parma would be ready with a magnificent Spanish army waiting aboard troop-ships for safe conduct into England. The Spanish regulars could then hold London up to ransom or burn it to the ground. So far, so good. But Philip, to whom amphibious warfare remained an unsolved mystery, thought that the Armada and the Spanish army could conquer England without actually destroying the English fleet. He could not see where raids must end and conquest must begin. Most Spaniards agreed with him. Parma and Santa Cruz did not. Parma, as a very able general, wanted to know how his oversea communications could be made quite safe. Santa Cruz, as a very able admiral, knew that no such sea road could possibly be safe while the ubiquitous English navy was undefeated and at large. Some time or other a naval battle must be won, or Parma's troops, cut off from their base of supplies and surrounded like an island by an angry sea of enemies, must surely perish. Win first at sea and then on land, said the expert warriors, Santa Cruz and Parma. Get into hated England with the least possible fighting, risk, or loss, said the mere politician, Philip, and then crush Drake if he annoys you.

Early and late persistent Philip slaved away upon this 'Enterprize of England.' With incredible toil he spun his web anew. The ships were collected into squadrons; the squadrons at last began to wear the semblance of a fleet. But semblance only. There were far too many soldiers and not nearly enough sailors. Instead of sending the fighting fleet to try to clear the way for the troopships coming later on, Philip mixed army and navy together. The men-of-war were not bad of their kind; but the kind was bad. They were floating castles, high out of the water, crammed with soldiers, some other landsmen, and stores, and with only light ordnance, badly distributed so as to fire at rigging and superstructures only, not at the hulls as the English did. Yet this was not the worst. The worst was that the fighting fleet was cumbered with troopships which might have been useful in boarding, but which were perfectly useless in fighting of any other kind — and the English men-of-war were much too handy to be laid aboard by the lubberly Spanish troopships. Santa Cruz worked himself to death. In one of his last dispatches he begged for more and better guns. All Philip could do was to authorize the purchase of whatever guns the foreign merchantmen in Lisbon

harbor could be induced to sell. Sixty second-rate pieces were obtained in this way.

Then, worn out by work and worry, Santa Cruz died, and Philip forced the command on a most reluctant landlubber, the Duke of Medina Sidonia, a very great grandee of Spain, but wholly unfitted to lead a fleet. The death of Santa Cruz, in whom the fleet and army had great confidence, nearly upset the whole 'Enterprize of England.' The captains were as unwilling to serve under bandy-legged, sea-sick Sidonia as he was unwilling to command them. Volunteering ceased. Compulsion failed to bring in the skilled ratings urgently required. The sailors were now not only fewer than ever — sickness and desertion had been thinning their ranks — but many of these few were unfit for the higher kinds of seamanship, while only the merest handful of them were qualified as seamen gunners. Philip, however, was determined; and so the doomed Armada struggled on, fitting its imperfect parts together into a still more imperfect whole until, in June, it was as ready as it ever could be made.

Meanwhile the English had their troubles too. These were also political. But the English navy was of such overwhelming strength that it could

stand them with impunity. The Queen, after thirty years of wonderful, if tortuous, diplomacy, was still disinclined to drop the art in which she was supreme for that in which she counted for so much less and by which she was obliged to spend so very much more. There was still a little peace party also bent on diplomacy instead of war. Negotiations were opened with Parma at Flushing and diplomatic 'feelers' went out towards Philip, who sent back some of his own. But the time had come for war. The stream was now too strong for either Elizabeth or Philip to stem or even divert into minor channels.

Lord Howard of Effingham, as Lord High Admiral of England, was charged with the defence at sea. It was impossible in those days to have any great force without some great nobleman in charge of it, because the people still looked on such men as their natural viceroys and commanders. But just as Sir John Norreys, the most expert professional soldier in England, was made Chief of the Staff to the Earl of Leicester ashore, so Drake was made Chief of the Staff to Howard afloat, which meant that he was the brain of the fleet.

A directing brain was sadly needed — not that brains were lacking, but that some one man of

original and creative genius was required to bring the modern naval system into triumphant being. Like all political heads, Elizabeth was sensitive to public opinion; and public opinion was ignorant enough to clamor for protection by something that a man could see; besides which there were all those weaklings who have been described as the old women of both sexes and all ages, and who have always been the nuisance they are still. Adding together the old views of warfare, which nearly everybody held, and the human weaknesses we have always with us, there was a most dangerously strong public opinion in favor of dividing up the navy so as to let enough different places actually see that they had some visible means of divided defence.

The 30th of March, 1588, is the day of days to be remembered in the history of sea power because it was then that Drake, writing from Plymouth to the Queen-in-Council, first formulated the true doctrine of modern naval warfare, especially the cardinal principle that the best of all defence is to attack your enemy's main fleet as it issues from its ports. This marked the birth of the system perfected by Nelson and thence passed on, with many new developments, to the British Grand Fleet in

the Great War of to-day. The first step was by far the hardest, for Drake had to convert the Queen and Howard to his own revolutionary views. He at last succeeded; and on the 7th of July sailed for Corunna, where the Armada had rendezvoused after being dispersed by a storm.

Every man afloat knew that the hour had come. Yet Elizabeth, partly on the score of expense, partly not to let Drake snap her apron-strings completely, had kept the supply of food and even of ammunition very short; so much so that Drake knew he would have to starve or else replenish from the Spanish fleet itself. As he drew near Corunna on the 8th, the Spaniards were again reorganizing. Hundreds of perfectly useless landlubbers, shipped at Lisbon to complete the absurdly undermanned ships, were being dismissed at Corunna. On the 9th, when Sidonia assembled a council of war to decide whether to put to sea or not, the English van was almost in sight of the coast. But then the north wind flawed, failed, and at last chopped round. A roaring sou'wester came on; and the great strategic move was over.

On the 12th the fleet was back in Plymouth replenishing as hard as it could. Howard behaved to perfection. Drake worked the strategy and

tactics. But Howard had to set the tone, afloat and ashore, to all who came within his sphere of influence; and right well he set it. His dispatches at this juncture are models of what such documents should be; and their undaunted confidence is in marked contrast to what the doomed Spanish officers were writing at the selfsame time.

The southwest wind that turned Drake back brought the Armada out and gave it an advantage which would have been fatal to England had the fleets been really equal, or the Spaniards in superior strength, for a week was a very short time in which to replenish the stores that Elizabeth had purposely kept so low. Drake and Howard, so the story goes, were playing a game of bowls on Plymouth Hoe on Friday afternoon the 19th of July when Captain Fleming of the *Golden Hind* rushed up to say the Spanish fleet was off the Lizard, only sixty miles away! All eyes turned to Drake. Divining the right way to calm the people, he whispered an order and then said out loud: 'There's time to end our game and beat the Spaniards too.' The shortness of food and ammunition that had compelled him to come back instead of waiting to blockade now threatened to get him nicely caught in the very trap he had wished to

catch the Great Armada in himself; for the Spaniards, coming up with the wind, might catch him struggling out against the wind and crush his long emerging column, bit by bit, precisely as he had intended crushing their own column as it issued from the Tagus or Corunna.

But it was only the van that Fleming had sighted. Many a Spanish straggler was still hull-down astern; and Sidonia had to wait for all to close and form up properly.

Meanwhile Drake and Howard were straining every nerve to get out of Plymouth. It was not their fault, but the Queen's-in-Council, that Sidonia had unwittingly stolen this march on them. It was their glory that they won the lost advantage back again. All afternoon and evening, all through that summer night, the sea-dog crews were warping out of harbor. Torches, flares, and cressets threw their fitful light on toiling lines of men hauling on ropes that moved the ships apparently like snails. But once in Plymouth Sound the whinnying sheaves and long *yo-hoes!* told that all the sail the ships could carry was being made for a life-or-death effort to win the weather gage. Thus beat the heart of naval England that momentous night in Plymouth Sound, while beacons blazed

from height to height ashore, horsemen spurred off post-haste with orders and dispatches, and every able-bodied landsman stood to arms.

Next morning Drake was in the Channel, near the Eddystone, with fifty-four sail, when he sighted a dim blur to windward through the thickening mist and drizzling rain. This was the Great Armada. Rain came on and killed the wind. All sail was taken in aboard the English fleet, which lay under bare poles, invisible to the Spaniards, who still announced their presence with some show of canvas.

In actual size and numbers the Spaniards were superior at first. But as the week-long running fight progressed the English evened up with reinforcements. Spanish vessels looked bigger than their tonnage, being high built; and Spanish official reports likewise exaggerated the size because their system of measurement made their three tons equal to an English four. In armament and seamen-gunners the English were perhaps five times as strong as the Armada — and seamen-gunners won the day. The English seamen greatly outnumbered the Spanish seamen, utterly surpassed them in seamanship, and enjoyed the further advantage of having far handier vessels to work.

The Spanish grand total, for all ranks and ratings was thirty thousand men; the English, only fifteen. But the Spaniards were six thousand short on arrival; and their actual seamen, many of whom were only half-trained, then numbered a bare seven thousand. The seventeen thousand soldiers only made the ships so many death-traps; for they were of no use afloat except as boarding parties — and no boarding whatever took place. The English fifteen thousand, on the other hand, were three-quarters seamen and one-quarter soldiers who were mostly trained as marines, and this total was actually present. On the whole, it is hardly an exaggeration to say that the Armada was mostly composed of armed transports while all the English vessels that counted in the fighting were real men-of-war.

In every one of the Armada's hundred and twenty-eight vessels, says an officer of the Spanish flagship, 'our people kneeled down and offered a prayer, beseeching our Lord to give us victory against the enemies of His holy faith.' The crews of the hundred and ninety-seven English vessels which, at one time or another, were present in some capacity on the scene of action also prayed for victory to the Lord of Hosts, but took the

proper naval means to win it. 'Trust in the Lord — and keep your powder dry,' said Oliver Cromwell when about to ford a river in the presence of the enemy. And so, in other words, said Drake.

All day long, on that fateful 20th of July, the visible Armada with its swinging canvas was lying-to fifteen miles west of the invisible, bare-masted English fleet. Sidonia held a council of war, which, landsman-like, believed that the English were divided, one-half watching Parma, the other the Armada. The trained soldiers and sailors were for the sound plan of attacking Plymouth first. Some admirals even proposed the only perfect plan of crushing Drake in detail as he issued from the Sound. All were in blissful ignorance of the astounding feat of English seamanship which had already robbed them of the only chance they ever had. But Philip, also landsman-like, had done his best to thwart his own Armada; for Sidonia produced the royal orders forbidding any attack on England till he and Parma had joined hands. Drake, however, might be crushed piecemeal in the offing when still with his aftermost ships in the Sound. So, with this true idea, unworkable because based on false information, the generals and admirals dispersed to their vessels and

waited. But then, just as night was closing in, the weather lifted enough to reveal Drake's astonishing position. Immediately pinnaces went scurrying to Sidonia for orders. But he had none to give. At one in the morning he learnt some more dumbfounding news: that the English had nearly caught him at Corunna, that Drake and Howard had joined forces, and that both were now before him.

Nor was even this the worst. For while the distracted Sidonia was getting his fleet into the 'eagle formation,' so suitable for galleys whose only fighting men were soldiers, the English fleet was stealing the weather gage, his one remaining natural advantage. An English squadron of eight sail manœuvred coast-wise on the Armada's inner flank, while, unperceived by the Spanish lookout, Drake stole away to sea, beat round its outer flank, and then, making the most of a westerly slant in the shifting breeze, edged in to starboard. The Spaniards saw nothing till it was too late, Drake having given them a berth just wide enough to keep them quiet. But when the sun rose, there, only a few miles off to windward, was the whole main body of the English fleet, coming on in faultless line-ahead, heeling nicely over on the

port tack before the freshening breeze, and, far from waiting for the Great Armada, boldly bearing down to the attack. With this consummate move the victory was won.

The rest was slaughter, borne by the Spaniards with a resolution that nothing could surpass. With dauntless tenacity they kept their 'eagle formation,' so useful at Lepanto, through seven dire days of most one-sided fighting. Whenever occasion seemed to offer, the Spaniards did their best to close, to grapple, and to board, as had their heroes at Lepanto. But the English merely laughed, ran in, just out of reach, poured in a shattering broadside between wind and water, stood off to reload, fired again, with equal advantage, at longer range, caught the slow galleons end-on, raked them from stem to stern, passed to and fro in one, long, deadly line-ahead, concentrating at will on any given target; and did all this with well-nigh perfect safety to themselves. In quite a different way close-to, but to the same effect at either distance, long or short, the English 'had the range of them,' as sailors say to-day. Close-to, the little Spanish guns fired much too high to hull the English vessels, lying low and trim upon the water, with whose changing humors their lines

fell in so much more happily than those of any lumbering Spaniards could. Far-off, the little Spanish guns did correspondingly small damage, even when they managed to hit; while the heavy metal of the English, handled by real seamen-gunners, inflicted crushing damage in return.

But even more important than the Englishmen's superiority in rig, hull, armament, and expert seamanship was their tactical use of the thoroughly modern line-ahead. Any one who will take the letter T as an illustration can easily understand the advantage of 'crossing his T.' The upright represents an enemy caught when in column-ahead, as he would be, for instance, when issuing from a narrow-necked port. In this formation he can only use bow fire, and that only in succession, on a very narrow front. But the fleet represented by the crosspiece, moving across the point of the upright, is in the deadly line-ahead, with all its near broadsides turned in one long converging line of fire against the helplessly narrow-fronted enemy. If the enemy, sticking to mediæval tactics, had room to broaden his front by forming column-abreast, as galleys always did, that is, with several uprights side by side, he would still be at the same sort of disadvantage; for this would only mean a

series of T's with each nearest broadside crossing each opposing upright as before.

The herded soldiers and non-combatants aboard the Great Armada stood by their useless duties to the last. Thousands fell killed or wounded. Several times the Spanish scuppers actually ran a horrid red, as if the very ships were bleeding. The priests behaved as bravely as the Jesuits of New France — and who could be braver than those undaunted missionaries were? Soldiers and sailors were alike. 'What shall we do now?' asked Sidonia after the slaughter had gone on for a week. 'Order up more powder,' said Oquendo, as dauntless as before. Even then the eagle formation was still kept up. The van ships were the head. The biggest galleons formed the body. Lighter vessels formed the wings. A reserve formed the tail.

As the unflinching Armada stood slowly up the Channel a sail or two would drop out by the way, dead-beat. One night several strange sail passed suddenly by Drake. What should he do? To go about and follow them with all astern of him doing the same in succession was not to be thought of, as his aftermost vessels were merchantmen, wholly untrained to the exact combined manœuvres required in a fighting fleet, though first-rate individ-

ually. There was then no night signal equivalent to the modern 'Disregard the flagship's movements.' So Drake dowsed his stern light, went about, overhauled the strangers, and found they were bewildered German merchantmen. He had just gone about once more to resume his own station when suddenly a Spanish flagship loomed up beside his own flagship the *Revenge*. Drake immediately had his pinnace lowered away to demand instant surrender. But the Spanish admiral was Don Pedro de Valdes, a very gallant commander and a very proud grandee, who demanded terms; and, though his flagship (which had been in collision with a run-amuck) seemed likely to sink, he was quite ready to go down fighting. Yet the moment he heard that his summoner was Drake he surrendered at discretion, feeling it a personal honor, according to the ideas of the age, to yield his sword to the greatest seaman in the world. With forty officers he saluted Drake, complimenting him on 'valour and felicity so great that Mars and Neptune seemed to attend him, as also on his generosity towards the fallen foe, a quality often experienced by the Spaniards; whereupon,' adds this eyewitness, 'Sir Francis Drake, requiting his Spanish compliments with honest English courte-

sies, placed him at his own table and lodged him in his own cabin.' Drake's enemies at home accused him of having deserted his fleet to capture a treasure ship — for there was a good deal of gold with Valdes. But the charge was quite unfounded.

A very different charge against Howard had more foundation. The Armada had anchored at Calais to get its breath before running the gauntlet for the last time and joining Parma in the Netherlands. But in the dead of night, when the flood was making and a strong west wind was blowing in the same direction as the swirling tidal stream, nine English fire-ships suddenly burst into flame and made for the Spanish anchorage. There were no boats ready to grapple the fire-ships and tow them clear. There was no time to weigh; for every vessel had two anchors down. Sidonia, enraged that the boats were not out on patrol, gave the order for the whole fleet to cut their cables and make off for their lives. As the great lumbering hulls, which had of course been riding head to wind, swung round in the dark and confusion, several crashing collisions occurred. Next morning the Armada was strung along the Flemish coast in disorderly flight. Seeing the impossibility of bringing the leewardly vessels back against the wind in

time to form up, Sidonia ran down with the windward ones and formed farther off. Howard then led in pursuit. But seeing the *capitana* of the renowned Italian galleasses in distress near Calais, he became a mediæval knight again, left his fleet, and took the galleasse. For the moment that one feather in his cap seemed better worth having than a general victory.

Drake forged ahead and led the pursuit in turn. The Spaniards fought with desperate courage, still suffering ghastly losses. But, do what they could to bear up against the English and the wind, they were forced to leeward of Dunkirk, and so out of touch with Parma. This was the result of the Battle of Gravelines, fought on Monday the 29th of July, 1588, just ten days after Captain Fleming had rushed on to the bowling green of Plymouth Hoe where Drake and Howard, their shore work done, were playing a game before embarking. In those ten days the gallant Armada had lost all chance of winning the overlordship of the sea and shaking the sea-dog grip off both Americas. A rising gale now forced it to choose between getting pounded to death on the shoals of Dunkirk or running north, through that North Sea in which the British Grand Fleet of the twentieth century

fought against the fourth attempt in modern times to win a world-dominion.

North, and still north, round by the surf-lashed Orkneys, then down the wild west coasts of the Hebrides and Ireland, went the forlorn Armada, losing ships and men at every stage, until at last the remnant straggled into Spanish ports like the mere wreckage of a storm.

CHAPTER X

'THE ONE AND THE FIFTY-THREE'

THE next year, 1589, is famous for the unsuccessful Lisbon Expedition. Drake had the usual troubles with Elizabeth, who wanted him to go about picking leaves and breaking branches before laying the axe to the root of the tree. Though there were in the Narrow Seas defensive squadrons strong enough to ward off any possible blow, yet the nervous landsmen wanted Corunna and other ports attacked and their shipping destroyed, for fear England should be invaded before Drake could strike his blow at Lisbon. Then there were troubles about stores and ammunition. The English fleet had been reduced to the last pound of powder twice during the ten-days' battle with the Armada. Yet Elizabeth was again alarmed at the expense of munitions. She never quite rose to the idea of one supreme and finishing blow, no matter what the cost might be.

This was a joint expedition, the first in which a really modern English fleet and army had ever taken part, with Sir John Norreys in command of the army. There was no trouble about recruits, for all men of spirit flocked in to follow Drake and Norreys. The fleet was perfectly organized into appropriate squadrons and flotillas, such as then corresponded with the battleships, cruisers, and mosquito craft of modern navies. The army was organized into battalions and brigades, with a regular staff and all the proper branches of the service.

The fleet made for Corunna, where Norreys won a brilliant victory. A curious little incident of exact punctilio is worth recording. After the battle, and when the fleet was waiting for a fair wind to get out of the harbor, the ships were much annoyed by a battery on the heights. Norreys undertook to storm the works and sent in the usual summons by a *parlementaire* accompanied by a drummer. An angry Spaniard fired from the walls and the drummer fell dead. The English had hostages on whom to take reprisals. But the Spaniards were too quick for them. Within ten minutes the guilty man was tried inside the fort by drum-head court-martial, condemned to death,

and swung out neatly from the walls, while a polite Spanish officer came over to assure the English troops that such a breach of discipline should not occur again.

Lisbon was a failure. The troops landed and marched over the ground north of Lisbon where Wellington in a later day made works whose fame has caused their memory to become an allusion in English literature for any impregnable base — the Lines of Torres Vedras. The fleet and the army now lost touch with each other; and that was the ruin of them all. Norreys was persuaded by Don Antonio, pretender to the throne of Portugal which Philip had seized, to march farther inland, where Portuguese patriots were said to be ready to rise *en masse*. This Antonio was a great talker and a first-rate fighter with his tongue. But his Portuguese followers, also great talkers, wanted to see a victory won by arms before they rose.

Before leaving Lisbon Drake had one stroke of good luck. A Spanish convoy brought in a Hanseatic Dutch and German fleet of merchantmen loaded down with contraband of war destined for Philip's new Armada. Drake swooped on it immediately and took sixty well-found ships. Then he went west to the Azores, looking for what

he called 'some comfortable little dew of Heaven,' that is, of course, more prizes of a richer kind. But sickness broke out. The men died off like flies. Storms completed the discomfiture. And the expedition got home with a great deal less than half its strength in men and not enough in value to pay for its expenses. It was held to have failed; and Drake lost favor.

With the sun of Drake's glory in eclipse at court and with Spain and England resting from warfare on the grander scale, there were no more big battles the following year. But the year after that, 1591, is rendered famous in the annals of the sea by Sir Richard Grenville's fight in Drake's old flagship, the *Revenge*. This is the immortal battle of 'the one and the fifty-three' from which Raleigh's prose and Tennyson's verse have made a glory of the pen fit to match the glory of the sword.

Grenville had sat, with Drake and Sir Philip Sidney, on the Parliamentary committee which recommended the royal charter granted to Sir Walter Raleigh for the founding of the first English colony in what is now the United States. Grenville's grandfather, Marshal of Calais to Henry VIII, had the faculty of rhyme, and, in a set of verses

very popular in their own day, showed what the Grenville family ambitions were.

> Who seeks the way to win renown,
> Or flies with wings to high desire,
> Who seeks to wear the laurel crown,
> Or hath the mind that would aspire —
> Let him his native soil eschew,
> Let him go range and seek a new.

Grenville himself was a wild and roving blade, no great commander, but an adventurer of the most daring kind by land or sea. He rather enjoyed the consternation he caused by aping the airs of a pirate king. He had a rough way with him at all times; and Ralph Lane was much set against his being the commander of the 'Virginia Voyage' of which Lane himself was the governor on land. But in action he always was, beyond a doubt, the very *beau idéal* of a 'first-class fighting man.' A striking instance of his methods was afforded on his return from Virginia, when he found an armed Spanish treasure ship ahead of him at sea. He had no boat to board her with. But he knocked some sort of one together out of the ship's chests and sprang up the Spaniard's side with his boarding party just as this makeshift boat was sinking under them.

The last fight of the *Revenge* is almost incredible from the odds engaged — fifty-three vessels to one. But it is true; and neither Raleigh's glowing prose nor Tennyson's glowing verse exaggerates it. Lord Thomas Howard, 'almost famished for want of prey,' had been cruising in search of treasure ships when Captain Middleton, one of the gentlemen-adventurers who followed the gallant Earl of Cumberland, came in to warn him that Don Alonzo de Bazan was following with fifty-three sail. The English crews were partly ashore at the Azores; and Howard had barely time to bring them off, cut his cables, and work to windward of the overwhelming Spaniards.

Grenville's men were last. The *Revenge* had only 'her hundred fighters on deck and her ninety sick below' when the Spanish fleet closed round him. Yet, just as he had sworn to cut down the first man who touched a sail when the master thought there was still a chance to slip through, so now he refused to surrender on any terms at all. Then, running down close-hauled on the starboard tack, decks cleared for action and crew at battle quarters, he steered right between two divisions of the Spanish fleet till 'the mountain-like *San Felipe*, of fifteen hundred tons,' ranging up on his weather side,

blanketed his canvas and left him almost becalmed. Immediately the vessels which the *Revenge* had weathered hauled their wind and came up on her from to-leeward. Then, at three o'clock in the afternoon of the 1st of September, 1591, that immortal fight began.

The first broadside from the *Revenge* took the *San Felipe* on the water-line and forced her to give way and stop her leaks. Then two Spaniards ranged up in her place, while two more kept station on the other side. And so the desperate fight went on all through that afternoon and evening and far on into the night. Meanwhile Howard, still keeping the weather gage, attacked the Spaniards from the rear and thought of trying to cut through them. But his sailing master swore it would be the end of all Her Majesty's ships engaged, as it probably would; so he bore away, wisely or not as critics may judge for themselves. One vessel, the little *George Noble* of London, a victualler, stood by the *Revenge*, offering help before the fight began. But Grenville, thanking her gallant skipper, ordered him to save his vessel by following Howard.

With never less than one enemy on each side of her, the *Revenge* fought furiously on. *Boarders away!* shouted the Spanish colonels as the ves-

sels closed. *Repel boarders!* shouted Grenville in reply. And they did repel them, time and again, till the English pikes dripped red with Spanish blood. A few Spaniards gained the deck, only to be shot, stabbed, or slashed to death. Towards midnight Grenville was hit in the body by a musket-shot fired from the tops — the same sort of shot that killed Nelson. The surgeon was killed while dressing the wound, and Grenville was hit in the head. But still the fight went on. The *Revenge* had already sunk two Spaniards, a third sank afterwards, and a fourth was beached to save her. But Grenville would not hear of surrender. When day broke not ten unwounded Englishmen remained. The pikes were broken. The powder was spent. The whole deck was a wild entanglement of masts, spars, sails, and rigging. The undaunted survivors stood dumb as their silent cannon. But every Spanish hull in the whole encircling ring of death bore marks of the *Revenge's* rage. Four hundred Spaniards, by their own admission, had been killed, and quite six hundred wounded. One hundred Englishmen had thus accounted for a thousand Spaniards besides all those that sank!

Grenville now gave his last order: 'Sink me the

ship, Master-Gunner!' But the sailing master and flag-captain, both wounded, protesting that all lives should be saved to avenge the dead, manned the only remaining boat and made good terms with the Spanish admiral. Then Grenville was taken very carefully aboard Don Bazan's flagship, where he was received with every possible mark of admiration and respect. Don Bazan gave him his own cabin. The staff surgeon dressed his many wounds. The Spanish captains and military officers stood hat in hand, 'wondering at his courage and stout heart, for that he showed not any signs of faintness nor changing of his colour.' Grenville spoke Spanish very well and handsomely acknowledged the compliments they paid him. Then, gathering his ebbing strength for one last effort, he addressed them in words they have religiously recorded: '"Here die I, Richard Grenville, with a joyful and quiet mind; for that I have ended my life as a true soldier ought to do, that hath fought for his country, queen, religion, and honour. Wherefore my soul most joyfully departeth out of this body." . . . And when he had said these and other suchlike words he gave up the ghost with a great and stout courage.'

Grenville's latest wish was that the *Revenge* and

he should die together; and, though he knew it not, he had this wish fulfilled. For, two weeks later, when Don Bazan had collected nearly a hundred more sail around him for the last stage home from the West Indies, a cyclone such as no living man remembered burst full on the crowded fleet. Not even the Great Armada lost more vessels than Don Bazan did in that wreck-engulfing week. No less than seventy went down. And with them sank the shattered *Revenge*, beside her own heroic dead.

Drake might be out of favor at court. The Queen might grumble at the sad extravagance of fleets. Diplomats might talk of untying Gordian knots that the sword was made to cut. Courtiers and politicians might wonder with which side to curry favor when it was an issue between two parties—peace or war. The great mass of ordinary landsmen might wonder why the 'sea-affair' was a thing they could not understand. But all this was only the mint and cummin of imperial things compared with the exalting deeds that Drake had done. For, once the English sea-dogs had shown the way to all America by breaking down the barriers of Spain, England had ceased to be merely an island in a northern sea and had become the mother

country of such an empire and republic as neither record nor tradition can show the like of elsewhere.

And England felt the triumph. She thrilled with pregnant joy. Poet and proseman both gave voice to her delight. Hear this new note of exultation born of England's victory on the sea:

As God hath combined the sea and land into one globe, so their mutual assistance is necessary to secular happiness and glory. The sea covereth one-half of this patrimony of man. Thus should man at once lose the half of his inheritance if the art of navigation did not enable him to manage this untamed beast; and with the bridle of the winds and the saddle of his shipping make him serviceable. Now for the services of the sea, they are innumerable: it is the great purveyor of the world's commodities; the conveyor of the excess of rivers; uniter, by traffique, of all nations; it presents the eye with divers colors and motions, and is, as it were with rich brooches, adorned with many islands. It is an open field for merchandise in peace; a pitched field for the most dreadful fights in war; yields diversity of fish and fowl for diet, material for wealth; medicine for sickness; pearls and jewels for adornment; the wonders of the Lord in the deep for all instruction; multiplicity of nature for contemplation; to the thirsty Earth fertile moisture; to distant friends pleasant meeting; to weary persons delightful refresh-

ing; to studious minds a map of knowledge, a school of prayer, meditation, devotion, and sobriety; refuge to the distressed, portage to the merchant, customs to the prince, passage to the traveller; springs, lakes, and rivers to the Earth. It hath tempests and calms to chastise sinners and exercise the faith of seamen; manifold affections to stupefy the subtlest philosopher, maintaineth (as in Our Island) a wall of defence and watery garrison to guard the state. It entertains the Sun with vapors, the Stars with a natural looking-glass, the sky with clouds, the air with temperateness, the soil with suppleness, the rivers with tides, the hills with moisture, the valleys with fertility. But why should I longer detain you? The Sea yields action to the body, meditation to the mind, and the World to the World, by this art of arts — Navigation.

Well might this pious Englishman, the Reverend Samuel Purchas, exclaim with David: *Thy ways are in the Sea, and Thy paths in the great waters, and Thy footsteps are not known.*

The poets sang of Drake and England, too. Could his 'Encompassment of All the Worlde' be more happily admired than in these four short lines:

> The Stars of Heaven would thee proclaim
> If men here silent were.
> The Sun himself could not forget
> His fellow traveller.

What wonder that after Nombre de Dios and the Pacific, the West Indies and the Spanish Main, Cadiz and the Armada, what wonder, after this, that Shakespeare, English to the core, rings out:—

This royal throne of kings, this sceptred isle,
This earth of majesty, this seat of Mars,
This other Eden, demi-paradise;
This fortress built by nature for herself
Against infection and the hand of war;
This happy breed of men, this little world;
This precious stone set in the silver sea,
Which serves it in the office of a wall,
Or as a moat defensive to a house,
Against the envy of less happy lands:
This blessed plot, this earth, this realm, this England.

. . . . . .

This England never did, nor never shall,
Lie at the proud foot of a conqueror,
But when it first did help to wound itself.
Now these her princes are come home again,
Come the three corners of the world in arms
And we shall shock them. Nought shall make us rue,
If England to herself do rest but true.

CHAPTER XI

RALEIGH AND THE VISION OF THE WEST

Conquerors first, prospectors second, then the pioneers: that is the order of those by whom America was opened up for English-speaking people. No Elizabethan colonies took root. Therefore the age of Elizabethan sea-dogs was one of conquerors and prospectors, not one of pioneering colonists at all.

Spain and Portugal alone founded sixteenth-century colonies that have had a continuous life from those days to our own. Virginia and New England, like New France, only began as permanent settlements after Drake and Queen Elizabeth were dead: Virginia in 1607, New France in 1608, New England in 1620.

It is true that Drake and his sea-dogs were prospectors in their way. So were the soldiers, gentlemen-adventurers, and fighting traders in theirs. On the other hand, some of the prospectors them-

selves belong to the class of conquerors, while many would have gladly been the pioneers of permanent colonies. Nevertheless the prospectors form a separate class; and Sir Walter Raleigh, though an adventurer in every other way as well, is undoubtedly their chief. His colonies failed. He never found his El Dorado. He died a ruined and neglected man. But still he was the chief of those whom we can only call prospectors, first, because they tried their fortune ashore, one step beyond the conquering sea-dogs, and, secondly, because their fortune failed them just one step short of where the pioneering colonists began.

> A man so various that he seemed to be
> Not one but all mankind's epitome

is a description written about a very different character. But it is really much more appropriate to Sir Walter Raleigh. Courtier and would-be colonizer, soldier and sailor, statesman and scholar, poet and master of prose, Raleigh had one ruling passion greater than all the rest combined. In a letter about America to Sir Robert Cecil, the son of Queen Elizabeth's principal minister of state, Lord Burleigh, he expressed this great determined

purpose of his life: *I shall yet live to see it an Inglishe nation.* He had other interests in abundance, perhaps in superabundance; and he had much more than the usual temptations to live the life of fashion with just enough of public duty to satisfy both the queen and the very least that is implied by the motto *Noblesse oblige.* He was splendidly handsome and tall, a perfect blend of strength and grace, full of deep, romantic interest in great things far and near: the very man whom women dote on. And yet, through all the seductions of the Court and all the storm and stress of Europe, he steadily pursued the vision of that West which he would make 'an Inglishe nation.'

He left Oxford as an undergraduate to serve the Huguenots in France under Admiral Coligny and the Protestants in Holland under William of Orange. Like Hawkins and Drake, he hated Spain with all his heart and paid off many a score against her by killing Spanish troops at Smerwick during an Irish campaign marked by ruthless slaughter on both sides. On his return to England he soon attracted the charmed attention of the queen. His spreading his cloak for her to tread on, lest she might wet her feet, is one of those stories which ought to be true if it's not. In any

case he won the royal favor, was granted monopolies, promotion, and estates, and launched upon the full flood-stream of fortune.

He was not yet thirty when he obtained for his half-brother, Sir Humphrey Gilbert, then a man of thirty-eight, a royal commission 'to inhabit and possess all remote and Heathen lands not in the possession of any Christian prince.' The draft of Gilbert's original prospectus, dated at London, the 6th of November, 1577, and still kept there in the Record Office, is an appeal to Elizabeth in which he proposed 'to discover and inhabit some strange place.' Gilbert was a soldier and knew what fighting meant; so he likewise proposed 'to set forth certain ships of war to the New Land, which, with your good licence, I will undertake without your Majesty's charge. . . . The New Land fish is a principal and rich and everywhere vendible merchandise; and by the gain thereof shipping, victual, munition, and the transporting of five or six thousand soldiers may be defrayed.'

But Gilbert's associates cared nothing for fish and everything for gold. He went to the West Indies, lost a ship, and returned without a fortune. Next year he was forbidden to repeat the experiment.

The project then languished until the fatal voyage of 1583, when Gilbert set sail with six vessels, intending to occupy Newfoundland as the base from which to colonize southwards until an armed New England should meet and beat New Spain. How vast his scheme! How pitiful its execution! And yet how immeasurably beyond his wildest dreams the actual development to-day! Gilbert was not a sea-dog but a soldier with an uncanny reputation for being a regular Jonah who 'had no good hap at sea.' He was also passionately self-willed, and Elizabeth had doubts about the propriety of backing him. But she sent him a gilt anchor by way of good luck and off he went in June, financed chiefly by Raleigh, whose name was given to the flagship.

Gilbert's adventure never got beyond its base in Newfoundland. His ship the *Delight* was wrecked. The crew of the *Raleigh* mutinied and ran her home to England. The other four vessels held on. But the men, for the most part, were neither good soldiers, good sailors, nor yet good colonists, but ne'er-do-wells and desperadoes. By September the expedition was returning broken down. Gilbert, furious at the sailors' hints that he was just a little sea-shy, would persist in sticking

to the Lilliputian ten-ton *Squirrel*, which was woefully top-hampered with guns and stores. Before leaving Newfoundland he was implored to abandon her and bring her crew aboard a bigger craft. But no. 'Do not fear,' he answered; 'we are as near to Heaven by sea as land.' One wild night off the Azores the *Squirrel* foundered with all hands.

Amadas and Barlow sailed in 1584. Prospecting for Sir Walter Raleigh, they discovered several harbors in North Carolina, then part of the vast 'plantation' of Virginia. Roanoke Island, Pamlico and Albemarle Sounds, as well as the intervening waters, were all explored with enthusiastic thoroughness and zeal. Barlow, a skipper who was handy with his pen, described the scent of that fragrant summer land in terms which attracted the attention of Bacon at the time and of Dryden a century later. The royal charter authorizing Raleigh to take what he could find in this strange land had a clause granting his prospective colonists 'all the privileges of free denizens and persons native of England in such ample manner as if they were born and personally resident in our said realm of England.'

Next year Sir Richard Grenville, who was

Raleigh's cousin, convoyed out to Roanoke the little colony which Ralph Lane governed and which, as we have seen in an earlier chapter, Drake took home discomfited in 1586. There might have been a story to tell of successful colonization, instead of failure, if Drake had kept away from Roanoke that year or if he had tarried a few days longer. For no sooner had the colony departed in Drake's vessels than a ship sent out by Sir Walter Raleigh, 'freighted with all maner of things in most plentiful maner,' arrived at Roanoke; and 'after some time spent in seeking our Colony up in the countrey, and not finding them, returned with all the aforesayd provision into England.' About a fortnight later Sir Richard Grenville himself arrived with three ships. Not wishing to lose possession of the country where he had planted a colony the year before, he 'landed fifteene men in the Isle of Roanoak, furnished plentifully with all maner of provision for two yeeres, and so departed for England.' Grenville unfortunately had burnt an Indian town and all its standing corn because the Indians had stolen a silver cup. Lane, too, had been severe in dealing with the natives and they had turned from friends to foes. These and other facts were carefully recorded on the spot by

the official chronicler, Thomas Harriot, better known as a mathematician.

Among the captains who had come out under Grenville in 1585 was Thomas Cavendish, a young and daring gentleman-adventurer, greatly distinguished as such even in that adventurous age, and the second English leader to circumnavigate the globe. When Drake was taking Lane's men home in June, 1586, Cavendish was making the final preparations for a two-year voyage. He sailed mostly along the route marked out by Drake, and many of his adventures were of much the same kind. His prime object was to make the voyage pay a handsome dividend. But he did notable service in clipping the wings of Spain. He raided the shipping off Chile and Peru, took the Spanish flagship, the famous *Santa Anna*, off the coast of California, and on his return home in 1588 had the satisfaction of reporting: 'I burned and sank nineteen sail of ships, both small and great; and all the villages and towns that ever I landed at I burned and spoiled.'

While Cavendish was preying on Spanish treasure in America, and Drake was 'singeing the King of Spain's beard' in Europe, Raleigh still pursued his colonizing plans. In 1587 John White and

twelve associates received incorporation as the 'Governor and Assistants of the City of Ralegh in Virginia.' The fortunes of this ambitious city were not unlike those of many another 'boomed' and 'busted' city of much more recent date. No time was lost in beginning. Three ships arrived at Roanoke on the 22nd of July, 1587. Every effort was made to find the fifteen men left behind the year before by Grenville to hold possession for the Queen. Mounds of earth, which may even now be traced, so piously have their last remains been cared for, marked the site of the fort. From natives of Croatoan Island the newcomers learned that Grenville's men had been murdered by hostile Indians.

One native friend was found in Manteo, a chief whom Barlow had taken to England and Grenville had brought back. Manteo was now living with his own tribe of sea-coast Indians on Croatoan Island. But the mischief between red and white had been begun; and though Manteo had been baptized and was recognized as 'The Lord of Roanoke' the races were becoming fatally estranged.

After a month Governor White went home for more men and supplies, leaving most of the colo-

nists at Roanoke. He found Elizabeth, Raleigh, and the rest all working to meet the Great Armada. Yet, even during the following year, the momentous year of 1588, Raleigh managed to spare two pinnaces, with fifteen colonists aboard, well provided with all that was most needed. A Spanish squadron, however, forced both pinnaces to run back for their lives. After this frustrated attempt two more years passed before White could again sail for Virginia. In August, 1590, his trumpeter sounded all the old familiar English calls as he approached the little fort. No answer came. The colony was lost for ever. White had arranged that if the colonists should be obliged to move away they should carve the name of the new settlement on the fort or surrounding trees, and that if there was either danger or distress they should cut a cross above. The one word CROATOAN was all White ever found. There was no cross. White's beloved colony, White's favorite daughter and her little girl, were perhaps in hiding. But supplies were running short. White was a mere passenger on board the ship that brought him; and the crew were getting impatient, so impatient for 'refreshment' and a Spanish prize that they sailed past Croatoan, refusing to stop a single hour.

Perhaps White learnt more than is recorded and was satisfied that all the colonists were dead. Perhaps not. Nobody knows. Only a wandering tradition comes out of that impenetrable mystery and circles round the not impossible romance of young Virginia Dare. Her father was one of White's twelve 'Assistants.' Her mother, Eleanor, was White's daughter. Virginia herself, the first of all true 'native-born' Americans, was born on the 18th of August, 1587. Perhaps Manteo, 'Lord of Roanoke,' saved the whole family whose name has been commemorated by that of the North Carolina county of Dare. Perhaps Virginia Dare alone survived to be an 'Indian Queen' about the time the first permanent Anglo-American colony was founded in 1607, twenty years after her birth. Who knows?

These twenty sundering years, from the end of this abortive colony in 1587 to the beginning of the first permanent colony in 1607, constitute a period that saw the close of one age and the opening of another in every relation of Anglo-American affairs.

Nor was it only in Anglo-American affairs that change was rife. 'The Honourable East India

Company' entered upon its wonderful career. Shakespeare began to write his immortal plays. The chosen translators began their work on the Authorized Version of the English Bible. The Puritans were becoming a force within the body politic as well as in religion. Ulster was 'planted' with Englishmen and Lowland Scots. In the midst of all these changes the great Queen, grown old and very lonely, died in 1603; and with her ended the glorious Tudor dynasty of England. James, pusillanimous and pedantic son of Darnley and Mary Queen of Scots, ascended the throne as the first of the sinister Stuarts, and, truckling to vindictive Spain, threw Raleigh into prison under suspended sentence of death.

There was a break of no less than fifteen years in English efforts to colonize America. Nothing was tried between the last attempt at Roanoke in 1587 and the first attempt in Massachusetts in 1602, when thirty-two people sailed from England with Bartholomew Gosnold, formerly a skipper in Raleigh's employ. Gosnold made straight for the coast of Maine, which he sighted in May. He then coasted south to Cape Cod. Continuing south he entered Buzzard's Bay, where he landed on Cuttyhunk Island. Here, on a little island in a lake —

an island within an island — he built a fort round which the colony was expected to grow. But supplies began to run out. There was bad blood over the proper division of what remained. The would-be colonists could not agree with those who had no intention of staying behind. The result was that the entire project had to be given up. Gosnold sailed home with the whole disgusted crew and a cargo of sassafras and cedar. Such was the first prospecting ever done for what is now New England.

The following year, 1603, just after the death of Queen Elizabeth, some merchant-venturers of Bristol sent out two vessels under Martin Pring. Like Gosnold, Pring first made the coast of Maine and then felt his way south. Unlike Gosnold, however, he 'bore into the great Gulfe' of Massachusetts Bay, where he took in a cargo of sassafras at Plymouth Harbor. But that was all the prospecting done this time. There was no attempt at colonizing.

Two years later another prospector was sent out by a more important company. The Earl of Southampton and Sir Ferdinando Gorges were the chief promoters of this enterprise. Gorges, as 'Lord Proprietary of the Province of Maine,' is a

well-known character in the subsequent history of New England. Lord Southampton, as Shakespeare's only patron and greatest personal friend, is forever famous through the world. The chief prospector chosen by the company was George Weymouth, who landed on the coast of Maine, explored a little of the surrounding country, kidnapped five Indians, and returned to England with a glowing account of what he had seen.

The cumulative effect of the three expeditions of Gosnold, Pring, and Weymouth was a revival of interest in colonization. Prominent men soon got together and formed two companies which were formally chartered by King James on the 10th of April, 1606. The 'first' or 'southern colony,' which came to be known as the London Company because most of its members lived there, was authorized to make its 'first plantation at any place upon the coast of Virginia or America between the four-and-thirty and one-and-forty degrees of latitude.' The northern or 'second colony,' afterwards called the Plymouth Company, was authorized to settle any place between 38° and 45° north, thus overlapping both the first company to the south and the French to the north.

In the summer of the same year, 1606, Henry

Challons took two ships of the Plymouth Company round by the West Indies, where he was caught in a fog by the Spaniards. Later in the season Pring went out and explored 'North Virginia.' In May, 1607, a hundred and twenty men, under George Popham, started to colonize this 'North Virginia.' In August they landed in Maine at the mouth of the Kennebec, where they built a fort, some houses, and a pinnace. Finding themselves short of provisions, two-thirds of their number returned to England late in the same year. The remaining third passed a terrible winter. Popham died, and Raleigh Gilbert succeeded him as governor. When spring came all the survivors of the colony sailed home in the pinnace they had built and the enterprise was abandoned. The reports of the colonists, after their winter in Maine, were to the effect that the second or northern colony was 'not habitable for Englishmen.'

In the meantime the permanent foundation of the first or southern colony, the real Virginia, was well under way. The same number of intending emigrants went out, a hundred and twenty. On the 26th of April, 1607, 'about four a-clocke in the morning, wee descried the Land of Virginia: the same day wee entered into the Bay of Chesupioc'

[Chesapeake]. Thus begins the tale of Captain John Smith, of the founding of Jamestown, and of a permanent Virginia, the first of the future United States.

Now that we have seen one spot in vast America really become the promise of the 'Inglishe nation' which Raleigh had longed for, we must return onee more to Raleigh himself as, mocked by his tantalizing vision, he looked out on a changing world from his secular Mount Pisgah in the prison Tower of London.

By this time he had felt both extremes of fortune to the full. During the travesty of justice at his trial the attorney-general, having no sound argument, covered him with slanderous abuse. These are three of the false accusations on which he was condemned to death: 'Viperous traitor,' 'damnable atheist,' and 'spider of hell.' Hawkins, Drake, Frobisher, and Grenville, all were dead. So Raleigh, last of the great Elizabethan lions, was caged and baited for the sport of Spain.

Six of his twelve years of imprisonment were lightened by the companionship of his wife, Elizabeth Throgmorton, most beautiful of all the late

Queen's maids of honor. Another solace was the *History of the World*, the writing of which set his mind free to wander forth at will although his body stayed behind the bars. But the contrast was too poignant not to wring this cry of anguish from his preface: 'Yet when we once come in sight of the Port of death, to which all winds drive us, and when by letting fall that fatal Anchor, which can never be weighed again, the navigation of this life takes end: Then it is, I say, that our own cogitations (those sad and severe cogitations, formerly beaten from us by our health and felicity) return again, and pay us to the uttermost for all the pleasing passages of our life past.'

At length, in the spring of 1616, Raleigh was released, though still unpardoned. He and his devoted wife immediately put all that remained of their fortune into a new venture. Twenty years before this he thought he could make 'Discovery of the mighty, rich, and beautiful Empire of Guiana, and of that great and golden city, which the Spaniards call El Dorado, and the natives call Manoa.' Now he would go back to find the El Dorado of his dreams, somewhere inland, that mysterious Manoa among those southern Mountains of Bright Stones which lay behind the Spanish Main. The

king's cupidity was roused; and so, in 1617, Raleigh was commissioned as the admiral of fourteen sail. In November he arrived off the coast that guarded all the fabled wealth still lying undiscovered in the far recesses of the Orinocan wilds. *Guiana, Manoa, El Dorado* — the inland voices called him on.

But Spaniards barred the way; and Raleigh, defying the instructions of the King, attacked them. The English force was far too weak and disaster followed. Raleigh's son and heir was killed and his lieutenant committed suicide. His men began to mutiny. Spanish troops and ships came closing in; and the forlorn remnant of the expedition on which such hopes were built went straggling home to England. There Raleigh was arrested and sent to the block on the 29th of October, 1618. He had played the great game of life-and-death and lost it. When he mounted the scaffold, he asked to see the axe. Feeling the edge, he smiled and said: 'Tis a sharp medicine, but a cure for all diseases.' Then he bared his neck and died like one who had served the Great Queen as her Captain of the Guard.

CHAPTER XII

DRAKE'S END

DRAKE in disfavor after 1589 seems a contradiction that nothing can explain. It can, however, be quite easily explained, though never explained away. He had simply failed to make the Lisbon Expedition pay — a heinous offence in days when the navy was as much a revenue department as the customs or excise. He had also failed to take Lisbon itself. The reasons why mattered nothing either to the disappointed government or to the general public.

But, six years later, in 1595, when Drake was fifty and Hawkins sixty-three, England called on them both to strike another blow at Spain. Elizabeth was helping Henry IV of France against the League of French and Spanish Catholics. Henry, astute as he was gallant, had found Paris 'worth a mass' and, to Elizabeth's dismay, had gone straight over to the Church of Rome with terms of

toleration for the Huguenots. The war against the Holy League, however, had not yet ended. The effect of Henry's conversion was to make a more united France against the encroaching power of Spain. And every eye in England was soon turned on Drake and Hawkins for a stroke at Spanish power beyond the sea.

Drake and Hawkins formed a most unhappy combination, made worse by the fact that Hawkins, now old beyond his years, soured by misfortune, and staled for the sea by long spells of office work, was put in as a check on Drake, in whom Elizabeth had lost her former confidence. Sir Thomas Baskerville was to command the troops. Here, at least, no better choice could have possibly been made. Baskerville had fought with rare distinction in the Brest campaign and before that in the Netherlands.

There was the usual hesitation about letting the fleet go far from home. The 'purely defensive' school was still strong; Elizabeth in certain moods belonged to it; and an incident which took place about this time seemed to give weight to the arguments of the defensivists. A small Spanish force, obliged to find water and provisions in a hurry, put into Mousehole in Cornwall and, finding no op-

position, burnt several villages down to the ground. The moment these Spaniards heard that Drake and Hawkins were at Plymouth they decamped. But this ridiculous raid threw the country into doubt or consternation. Elizabeth was as brave as a lion for herself. But she never grasped the meaning of naval strategy, and she was supersensitive to any strong general opinion, however false. Drake and Hawkins, with Baskerville's troops (all in transports) and many supply vessels for the West India voyage, were ordered to cruise about Ireland and Spain looking for enemies. The admirals at once pointed out that this was the work of the Channel Fleet, not that of a joint expedition bound for America. Then, just as the Queen was penning an angry reply, she received a letter from Drake, saying that the chief Spanish treasure ship from Mexico had been seen in Porto Rico little better than a wreck, and that there was time to take her if they could only sail at once. The expedition was on the usual joint-stock lines and Elizabeth was the principal shareholder. She swallowed the bait whole; and sent sailing orders down to Plymouth by return.

And so, on the 28th of August, 1595, twenty-five hundred men in twenty-seven vessels sailed out,

bound for New Spain. Surprise was essential; for New Spain, taught by repeated experience, was well armed; and twenty-five hundred men were less formidable now than five hundred twenty years before. Arrived at the Canaries, Las Palmas was found too strong to carry by immediate assault; and Drake had no time to attack it in form. He was two months late already; so he determined to push on to the West Indies.

When Drake reached Porto Rico, he found the Spanish in a measure forewarned and forearmed. Though he astonished the garrison by standing boldly into the harbor and dropping anchor close to a masked battery, the real surprise was now against him. The Spanish gunners got the range to an inch, brought down the flagship's mizzen, knocked Drake's chair from under him, killed two senior officers beside him, and wounded many more. In the meantime Hawkins, worn out by his exertions, had died. This reception, added to the previous failures and the astonishing strength of Porto Rico, produced a most depressing effect. Drake weighed anchor and went out. He was soon back in a new place, cleverly shielded from the Spanish guns by a couple of islands. After some more manœuvres he attacked the Spanish fleet with fire-

balls and by boarding. When a burning frigate lit up the whole wild scene, the Spanish gunners and musketeers poured into the English ships such a concentrated fire that Drake was compelled to retreat. He next tried the daring plan of running straight into the harbor, where there might still be a chance. But the Spaniards sank four of their own valuable vessels in the harbor mouth — guns, stores, and all — just in the nick of time, and thus completely barred the way.

Foiled again, Drake dashed for the mainland, seized La Hacha, burnt it, ravaged the surrounding country, and got away with a successful haul of treasure; then he seized Santa Marta and Nombre de Dios, both of which were found nearly empty. The whole of New Spain was taking the alarm — *The Dragon's back again!* Meanwhile a fleet of more than twice Drake's strength was coming out from Spain to attack him in the rear. Nor was this all, for Baskerville and his soldiers, who had landed at Nombre de Dios and started overland, were in full retreat along the road from Panama, having found an impregnable Spanish position on the way. It was a sad beginning for 1596, the centennial year of England's first connection with America.

'Since our return from Panama he never carried mirth nor joy in his face,' wrote one of Baskerville's officers who was constantly near Drake. A council of war was called and Drake, making the best of it, asked which they would have, Truxillo, the port of Honduras, or the 'golden towns' round about Lake Nicaragua. 'Both,' answered Baskerville, 'one after the other.' So the course was laid for San Juan on the Nicaragua coast. A head wind forced Drake to anchor under the island of Veragua, a hundred and twenty-five miles west of Nombre de Dios Bay and right in the deadliest part of that fever-stricken coast. The men began to sicken and die off. Drake complained at table that the place had changed for the worse. His earlier memories of New Spain were of a land like a 'pleasant and delicious arbour' very different from the 'vast and desert wilderness' he felt all round him now. The wind held foul. More and more men lay dead or dying. At last Drake himself, the man of iron constitution and steel nerves, fell ill and had to keep his cabin. Then reports were handed in to say the stores were running low and that there would soon be too few hands to man the ships. On this he gave the order to weigh and 'take the wind as God had sent it.'

So they stood out from that pestilential Mosquito Gulf and came to anchor in the fine harbor of Puerto Bello, which the Spaniards had chosen to replace the one at Nombre de Dios, twenty miles east. Here, in the night of the 27th of January, Drake suddenly sprang out of his berth, dressed himself, and raved of battles, fleets, Armadas, Plymouth Hoe, and plots against his own command. The frenzy passed away. He fell exhausted, and was lifted back to bed again. Then 'like a Christian, he yielded up his spirit quietly.'

His funeral rites befitted his renown. The great new Spanish fort of Puerto Bello was given to the flames, as were nearly all the Spanish prizes, and even two of his own English ships; for there were now no sailors left to man them. Thus, amid the thunder of the guns whose voice he knew so well, and surrounded by consuming pyres afloat and on the shore, his body was committed to the deep, while muffled drums rolled out their last salute and trumpets wailed his requiem.

APPENDIX

NOTE ON TUDOR SHIPPING

In the sixteenth century there was no hard-and-fast distinction between naval and all other craft. The sovereign had his own fighting vessels; and in the course of the seventeenth century these gradually evolved into a Royal Navy maintained entirely by the country as a whole and devoted solely to the national defence. But in earlier days this modern system was difficult everywhere and impossible in England. The English monarch, for all his power, had no means of keeping up a great army and navy without the help of Parliament and the general consent of the people. The Crown had great estates and revenues; but nothing like enough to make war on a national scale. Consequently king and people went into partnership, sometimes in peace as well as war. When fighting stopped, and no danger seemed to threaten, the king would use his men-of-war in trade himself, or even hire them out to merchants. The merchants, for their part, furnished vessels to the king in time of war. Except as supply ships, however, these auxiliaries were never a great success. The privateers built expressly for fighting were the only ships that could approach the men-of-war.

Yet, strangely enough, King Henry's first modern men-of-war grew out of a merchant-ship model, and a foreign one at that. Throughout ancient and mediæval times the 'long ship' was the man-of-war while the 'round ship' was the merchantman. But the long ship was always some sort of galley, which, as we have seen repeatedly, depended on its oars and used sails only occasionally, and then not in action, while the round ship was built to carry cargo and to go under sail. The Italian naval architects, then the most scientific in the world, were trying to evolve two types of vessel: one that could act as light cavalry on the wings of a galley fleet, the other that could carry big cargoes safely through the pirate-haunted seas. In both types sail power and fighting power were essential. Finally a compromise resulted and the galleasse appeared. The galleasse was a hybrid between the galley and the sailing vessel, between the 'long ship' that was several times as long as it was broad and the 'round ship' that was only two or three times as long as its beam. Then, as the oceanic routes gained on those of the inland seas, and as oceanic sea power gained in the same proportion, the galleon appeared. The galleon had no oars at all, as the hybrid galleasses had, and it gained more in sail power than it lost by dropping oars. It was, in fact, the direct progenitor of the old three-decker which some people still alive can well remember.

At the time the Cabots and Columbus were discovering America the Venetians had evolved the merchant-galleasse for their trade with London: they called it, indeed, the *galleazza di Londra*. Then, by

the time Henry VIII was building his new modern navy, the real galleon had been evolved (out of the Italian new war- and older merchant-galleasses) by England, France, and Scotland; but by England best of all. In original ideas of naval architecture England was generally behind, as she continued to be till well within living memory. Nelson's captains competed eagerly for the command of French prizes, which were better built and from superior designs. The American frigates of 1812 were incomparably better than the corresponding classes in the British service were; and so on in many other instances. But, in spite of being rather slow, conservative, and rule-of-thumb, the English were already beginning to develop a national sea-sense far beyond that of any other people. They could not, indeed, do otherwise and live. Henry's policy, England's position, the dawn of oceanic strategy, and the discovery of America, all combined to make her navy by far the most important single factor in England's problems with the world at large. As with the British Empire now, so with England then: the choice lay between her being either first or nowhere.

Henry's reasoning and his people's instinct having led to the same resolve, everyone with any sea-sense, especially shipwrights like Fletcher of Rye, began working towards the best types then obtainable. There were mistakes in plenty. The theory of naval architecture in England was never both sound and strong enough to get its own way against all opposition. But with the issue of life and death always dependent on sea power, and with so many men of every

class following the sea, there was at all events the biggest rough-and-tumble school of practical seamanship that any leading country ever had. The two essential steps were quickly taken: first, from oared galleys with very little sail power to the hybrid galleasse with much more sail and much less in the way of oars; secondly, from this to the purely sailing galleon.

With the galleon we enter the age of sailing tactics which decided the fate of the oversea world. This momentous age began with Drake and the English galleon. It ended with Nelson and the first-rate, three-decker, ship-of-the-line. But it was one throughout; for its beginning differed from its end no more than a father differs from his son.

One famous Tudor vessel deserves some special notice, not because of her excellence but because of her defects.

The *Henry Grace à Dieu*, or *Great Harry* as she was generally called, launched in 1514, was Henry's own flagship on his way to the Field of the Cloth of Gold in 1520. She had a gala suit of sails and pennants, all made of damasked cloth of gold. Her quarters, sides, and tops were emblazoned with heraldic targets. Court artists painted her to show His Majesty on board wearing cloth of gold, edged with the royal ermine; as well as bright crimson jacket, sleeves, and breeches, with a long white feather in his cap. Doubtless, too, His Majesty of France paid her all the proper compliments; while every man who was then what reporters are to-day talked her up to the top of his bent. No single vessel ever had greater publicity till the famous

first *Dreadnought* of our own day appeared in the British navy nearly four hundred years later.

But the much advertised *Great Harry* was not a mighty prototype of a world-wide-copied class of battleships like the modern *Dreadnought*. With her lavish decorations, her towering superstructures fore and aft, and her general aping of a floating castle, she was the wonder of all the landsmen in her own age, as she has been the delight of picturesque historians ever since. But she marked no advance in naval architecture, rather the reverse. She was the last great English ship of mediæval times. Twenty-five years after the Field of the Cloth of Gold, Henry was commanding another English fleet, the first of modern times, and therefore one in which the out-of-date *Great Harry* had no proper place at all. She was absurdly top-hampered and over-gunned. And, for all her thousand tons, she must have bucketed about in the chops of the Channel with the same sort of hobby-horse, see-sawing pitch that bothered Captain Concas in 1893 when sailing an exact reproduction of Columbus's flagship, the *Santa Maria*, across the North Atlantic to the great World's Fair at Chicago.

In her own day the galleon was the 'great ship,' 'capital ship,' 'ship-of-the-line-of-battle,' or 'battleship' on which the main fight turned. But just as our modern fleets require three principal kinds of vessels — battleships, cruisers, and 'mosquito' craft — so did the fleets of Henry and Elizabeth. The galleon did the same work as the old three-decker of Nelson's time or the battleship of to-day. The 'pinnace' (quite different from more modern pinnaces) was the frigate

or the cruiser. And, in Henry VIII's fleet of 1545, the 'row-barge' was the principal 'mosquito' craft, like the modern torpedo-boat, destroyer, or even submarine. Of course the correspondence is far from being complete in any class.

The English galleon gradually developed more sail and gun power as well as handiness in action. Broadside fire began. When used against the Armada, it had grown very powerful indeed. At that time the best guns, some of which are still in existence, were nearly as good as those at Trafalgar or aboard the smart American frigates that did so well in '1812.' When galleon broadsides were fired from more than a single deck, the lower ones took enemy craft between wind and water very nicely. In the English navy the portholes had been cut so as to let the guns be pointed with considerable freedom, up or down, right or left. The huge top-hampering 'castles' and other soldier-engineering works on deck were modified or got rid of, while more canvas was used and to much better purpose.

The pinnace showed the same sort of improvement during the same period — from Drake's birth under Henry VIII in 1545 to the zenith of his career as a sea-dog in 1588. This progenitor of the frigate and the cruiser was itself descended from the long-boat of the Norsemen and still used oars as occasion served. But the sea-dogs made it primarily a sailing vessel of anything up to a hundred tons and generally averaging over fifty. A smart pinnace, with its long, low, clean-run hull, if well handled under its Elizabethan fighting canvas of foresail and main topsail, could play round

a Spanish galleasse or absurdly castled galleon like a lancer on a well-trained charger round a musketeer astraddle on a cart horse.[1] Henry's pinnaces still had lateen sails copied from Italian models. Elizabeth's had square sails prophetic of the frigate's. Henry's had one or a very few small guns. Elizabeth's had as many as sixteen, some of medium size, in a hundred-tonner.

The 'mosquito' fleet of Henry's time was represented by 'row-barges' of his own invention. Now that the pinnace was growing in size and sail power, while shedding half its oars, some new small rowing craft was wanted, during that period of groping transition, to act as a tender or to do 'mosquito' work in action. The mere fact that Henry VIII placed no dependence on oars except for this smallest type shows how far he had got on the road towards the broadside-sailing-ship fleet. On the 16th of July, 1541, the Spanish Naval Attaché (as we should call him now) reported to Charles V that Henry had begun 'to have new oared vessels built after his own design.' Four years later these same 'row-barges' — long, light, and very handy — hung round the sterns of the retreating Italian galleys in the French fleet to very good purpose, plying them with bow-chasers and the two broadside guns, till

[1] Fuller in his *Worthies* (1662) writes:

'Many were the wit-combats betwixt him [Shakespeare] and Ben Jonson, which two I beheld like a Spanish great galleon and an English man-of-war: Master Jonson (like the former) was built far higher in learning, solid but slow in his performances. Shakespeare, like the English man-of-war, lesser in bulk, but lighter in sailing, could turn with all tides, tack about, and take advantage of all winds by the quickness of his wit and invention.'

Strozzi, the Italian galley-admiral, turned back on them in fury, only to see them slip away in perfect order and with complete immunity.

By the time of the Armada the mosquito fleet had outgrown these little rowing craft and had become more oceanic. But names, types, and the evolution of one type from another, with the application of the same name to changed and changing types, all tend to confusion unless the subject is followed in such detail as is impossible here.

The fleets of Henry VIII and of Elizabeth did far more to improve both the theory and practice of naval gunnery than all the fleets in the world did from the death of Drake to the adoption of rifled ordnance within the memory of living men. Henry's textbook of artillery, republished in 1588, the year of the Armada, contains very practical diagrams for finding the range at sea by means of the gunner's half circle — yet we now think range-finding a very modern thing indeed. There are also full directions for making common and even something like shrapnel shells, 'star shells' to light up the enemy at night, armor-piercing arrows shot out of muskets, 'wild-fire' grenades, and many other ultra-modern devices.

Henry established Woolwich Dockyard, second to none both then and now, as well as Trinity House, which presently began to undertake the duties it still discharges by supervising all aids to navigation round the British Isles. The use of quadrants, telescopes, and maps on Mercator's projection all began in the reign of Elizabeth, as did many other inventions, adaptations, handy wrinkles, and vital changes in

strategy and tactics. Taken together, these improvements may well make us of the twentieth century wonder whether we are so very much superior to the comrades of Henry, Elizabeth, Shakespeare, Bacon, Raleigh, and Drake.

BIBLIOGRAPHICAL NOTE

A COMPLETE bibliography concerned with the first century of Anglo-American affairs (1496–1596) would more than fill the present volume. But really informatory books about the sea-dogs proper are very few indeed, while good books of any kind are none too common.

Taking this first century as a whole, the general reader cannot do better than look up the third volume of Justin Winsor's *Narrative and Critical History of America* (1884) and the first volume of Avery's *History of the United States and its People* (1904). Both give elaborate references to documents and books, but neither professes to be at all expert in naval or nautical matters, and a good deal has been written since.

THE CABOTS. Cabot literature is full of conjecture and controversy. G. P. Winship's *Cabot Bibliography* (1900) is a good guide to all but recent works. Nicholls' *Remarkable Life of Sebastian Cabot* (1869) shows more zeal than discretion. Harrisse's *John Cabot and his son Sebastian* (1896) arranges the documents in scholarly order but draws conclusions betraying a wonderful ignorance of the coast. On the whole, Dr. S. E. Dawson's very careful monographs in the *Transactions of the Royal Society of Canada* (1894, 1896, 1897) are the happiest blend of scholarship and local knowledge.

Neither the Cabots nor their crews appear to have written a word about their adventures and discoveries. Consequently the shifting threads of hearsay evidence soon became inextricably tangled. Biggar's *Precursors of Cartier* is an able and accurate work.

Elizabeth. Turning to the patriot queen who had to steer England through so many storms and tortuous channels, we could find no better short guide to her political career than Beesley's volume about her in 'Twelve English Statesmen.' But the best all-round biography is *Queen Elizabeth* by Mandell Creighton, who also wrote an excellent epitome, called *The Age of Elizabeth*, for the 'Epochs of Modern History.' *Shakespeare's England*, published in 1916 by the Oxford University Press, is quite encyclopædic in its range.

Life Afloat. The general evolution of wooden sailing craft may be traced out in Part I of Sir George Holmes's convenient little treatise on *Ancient and Modern Ships*. There is no nautical dictionary devoted to Elizabethan times. But a good deal can be picked up from the two handy modern glossaries of Dana and Admiral Smyth, the first being an American author, the second a British one. Smyth's *Sailor's Word Book* has no alternative title. But Dana's *Seaman's Friend* is known in England under the name of *The Seaman's Manual*. Technicalities change so much more slowly afloat than ashore that even the ultra-modern editions of Paasch's magnificent polyglot dictionary, *From Keel to Truck*, still contain many nautical terms which will help the reader out of some of his difficulties.

The life of the sea-dogs, gentlemen-adventurers, and merchant-adventurers should be studied in Hak-

luyt's collection of *Principal Navigations, Voiages, Traffiques, and Discoveries;* though many of his original authors were landsmen while a few were civilians as well. This Elizabethan Odyssey, the great prose epic of the English race, was first published in a single solemn folio the year after the Armada — 1589. In the nineteenth century the Hakluyt Society reprinted and edited these *Navigations* and many similar works, though not without employing some editors who had no knowledge of the Navy or the sea. In 1893 E. J. Payne brought out a much handier edition of the *Voyages of the Elizabethan Seamen to America* which gives the very parts of Hakluyt we want for our present purpose, and gives them with a running accompaniment of pithy introductions and apposite footnotes. Nearly all historians are both landsmen and civilians whose sins of omission and commission are generally at their worst in naval and nautical affairs. But James Anthony Froude, whatever his other faults may be, did know something of life afloat, and his *English Seamen in the Sixteenth Century*, despite its ultra-Protestant tone, is well worth reading.

Hawkins. *The Hawkins Voyages*, published by the Hakluyt Society, give the best collection of original accounts. They deal with three generations of this famous family and are prefaced by a good introduction. *A Sea-Dog of Devon*, by R. A. J. Walling (1907) is the best recent biography of Sir John Hawkins.

Drake. Politics, policy, trade, and colonization were all dependent on sea power; and just as the English Navy was by far the most important factor in solving the momentous New-World problems of that

awakening age, so Drake was by far the most important factor in the English Navy. *The Worlde Encompassed by Sir Francis Drake* and *Sir Francis Drake his Voyage, 1595*, are two of the volumes edited by the Hakluyt Society. But these contemporary accounts of his famous fights and voyages do not bring out the supreme significance of his influence as an admiral, more especially in connection with the Spanish Armada. It must always be a matter of keen, though unavailing, regret that Admiral Mahan, the great American expositor of sea power, began with the seventeenth, not the sixteenth, century. But what Mahan left undone was afterwards done to admiration by Julian Corbett, Lecturer in History to the (British) Naval War College, whose *Drake and the Tudor Navy* (1912) is absolutely indispensable to any one who wishes to understand how England won her footing in America despite all that Spain could do to stop her. Corbett's *Drake* (1890) in the 'English Men of Action' series is an excellent epitome. But the larger book is very much the better. Many illuminative documents on *The Defeat of the Spanish Armada* were edited in 1894 by Corbett's predecessor, Sir John Laughton. The only other work that need be consulted is the first volume of *The Royal Navy: a History*, edited by Sir William Laird Clowes (1897). This is not so good an authority as Corbett; but it contains many details which help to round the story out, besides a wealth of illustration.

Raleigh. Gilbert, Cavendish, Raleigh, and the other gentlemen-adventurers, were soldiers, not sailors; and if they had gone afloat two centuries later they would have fought at the head of marines, not of blue-

jackets; so their lives belong to a different kind of biography from that concerned with Hawkins, Frobisher, and Drake. Edwards's *Life of Sir Walter Raleigh* (1868) contains all the most interesting letters and is a competent work of its own kind. Oldys' edition of Raleigh's *Works* still holds the field though its eight volumes were published so long ago as 1829. Raleigh's *Discovery of Guiana* is the favorite for reprinting. The Hakluyt Society has produced an elaborate edition (1847) while a very cheap and handy one has been published in Cassell's National Library. W. G. Gosling's *Life of Sir Humphry Gilbert* (1911) is the best recent work of its kind.

The likeliest of all the Hakluyt Society's volumes, so far as its title is concerned, is one which has hardly any direct bearing on the subject of our book. Yet the reader who is disappointed by the text of *Divers Voyages to America* because it is not devoted to Elizabethan sea-dogs will be richly rewarded by the notes on pages 116–141. These quaint bits of information and advice were intended for quite another purpose. But their transcriber's faith in their wider applicability is fully justified. Here is the exact original heading under which they first appeared: *Notes in Writing besides More Privie by Mouth that were given by a Gentleman, Anno 1580, to M. Arthure Pette and to M. Charles Jackman, sent by the Marchants of the Muscovie Companie for the discouerie of the northeast strayte, not altogether vnfit for some other enterprises of discouerie, hereafter to bee taken in hande.*

See also in *The Encyclopædia Britannica*, 11th Ed., the articles on *Henry VIII*, *Elizabeth*, *Drake*, *Raleigh*, etc.

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